

BUSINESS WEEK

FEB. 26, 1949



Louis C. Edgar, Jr.: 38-year-old executive takes command at E. W. Bliss Co. (page 6)

BUSINESS
WEEK
INDEX

A MCGRAW-HILL PUBLICATION

TWENTY-FIVE CENTS



If you talk profit dollars You must talk wage dollars and tax dollars

THE enemies of business (their Americanism has a foreign accent) are shouting that corporations are making more profits than they used to make.

That's true. The workers of these same corporations are making more, too—more wages . . . Is that bad? And the tax collector is taking more, from those companies.

From 1929 to 1947, here's the change for all American companies:

Total wage dollars up	137.2%
Tax dollars up	735.7%
Profit dollars up	112.2%
Dividends to owners (dollars) up	19.0%

So, you see, those furtive people who talk against profits are talking even more against wages. Of course, the two go together: destroy profits and you destroy wages; protect fair profits and you protect wages. As a great labor leader said, "The worst crime against working people is the corporation which fails to operate at a profit."

Source: Survey of Current Business, July, 1948.
Published by Department of Commerce.



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Boxes climb up the chute

A typical example of B. F. Goodrich product improvement

BAGS, cartons, cans, boxes, suitcases, sometimes even coal and ice, have to be carried up and up again for storage, shipment or manufacturing. It used to cost a lot of money. Anything that saves handling costs helps keep prices down!

B. F. Goodrich, makers of conveyor belts for years, believed they could make a "climbing belt," one without buckets or cleats that would grip boxes or other smooth or slippery articles, carry them up long or short inclines without letting them slide. They

designed a rubber surface covered with flexible rubber fingers, thousands of them to each square foot. They grip so well that these belts have even been used to carry chunks of ice up a grade. They've been used for suitcases at airports, railroad stations, and for almost every kind of package imaginable.

It's one more case of the product improvement that's always going on at B. F. Goodrich. Not a day passes without dozens of research men, engineers and others putting in hours of work finding ways to cut costs,

lower prices or make new kinds of things people want.

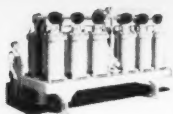
If you buy or use conveyor belts or V belts, flat transmission belts, any of the many kinds of hose or other industrial rubber products, don't be satisfied with any product you now have, without finding out what BFG may have done recently to improve it. *The B. F. Goodrich Company, Industrial Products Division, Akron, Ohio.*

B. F. Goodrich
RUBBER FOR INDUSTRY

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Companies with
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Progressive
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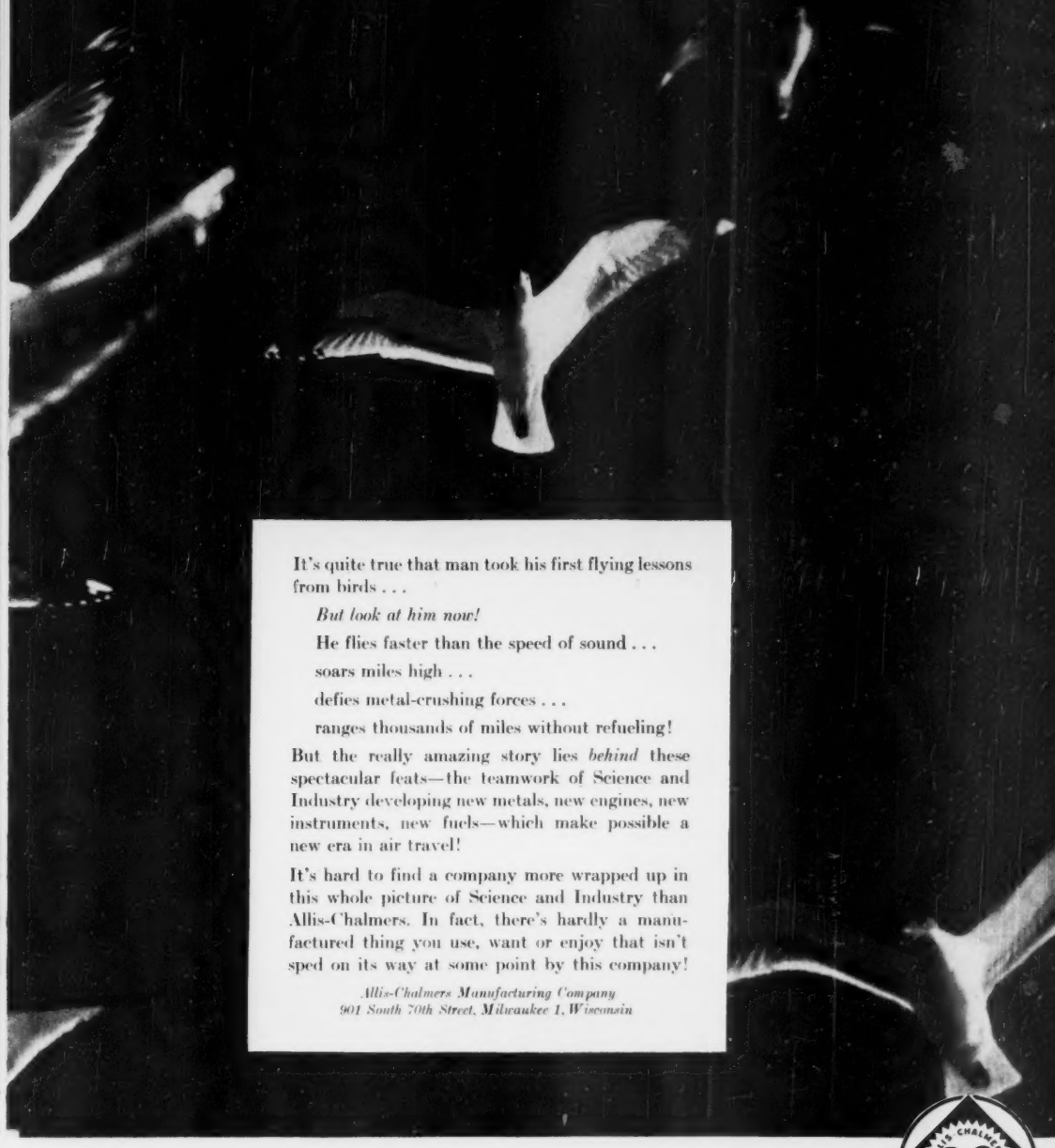


A-C Maintains pilot plant facilities for solvent extraction development



and test work on oil and non-oil-bearing materials... cottonseed, soybeans, coffee, fish meal—builds complete oil extraction plants of any size

Wherever You See the trademark A-C on turbine, generator, blower or any other machine, expect dependability and long-life service.



It's quite true that man took his first flying lessons
from birds . . .

But look at him now!

He flies faster than the speed of sound . . .

soars miles high . . .

defies metal-crushing forces . . .

ranges thousands of miles without refueling!

But the really amazing story lies *behind* these
spectacular feats—the teamwork of Science and
Industry developing new metals, new engines, new
instruments, new fuels—which make possible a
new era in air travel!

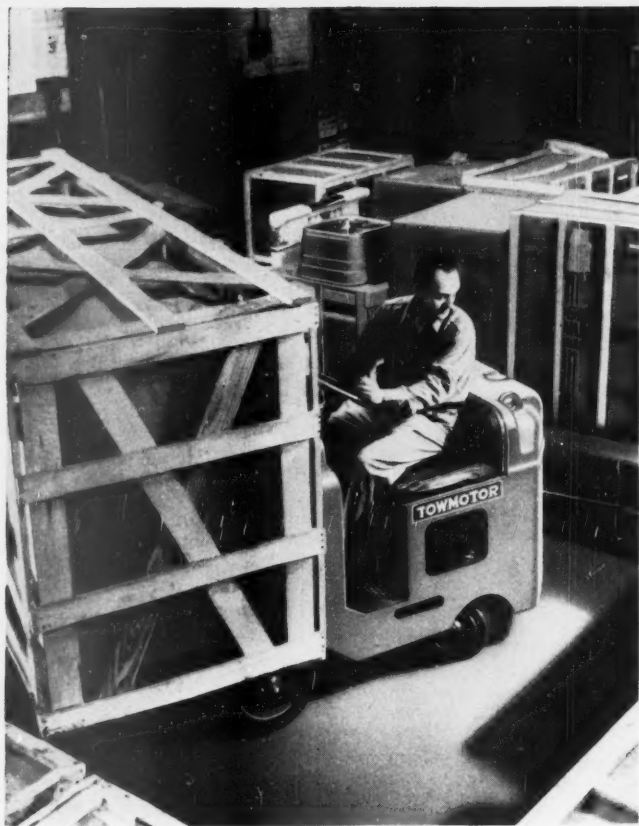
It's hard to find a company more wrapped up in
this whole picture of Science and Industry than
Allis-Chalmers. In fact, there's hardly a manu-
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BUSINESS WEEK • Feb. 26, 1949

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Contributions To the Heritage of American Industry



Ideas that changed the course of industry



A small group of pioneer precision measuring instruments and a pictorial history of measurement down through the ages—these are the components of a permanent display at the Smithsonian Institution in Washington.

These instruments, the first of their kind in this country, are significant in that they and their immediate successors emancipated American Industry from a strong European influence in the field of precision measurement. They pointed a new and better way and one that was typically American. Their success marked a new era in industry.

The basic engineering principles constitute the foundation for spectacular achievements in high speed precision inspection. Today, the United States is an undisputed leader in dimensional control for interchangeable manufacture that makes mass production possible and practical.

Much of today's multiple, segregating, classifying, and automatic inspection equipment and the resulting lowest gaging cost per piece owes its inception to these original instruments. It is wise and thrifty to specify Sheffield.

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THE COVER

Last week, Louis C. Edgar, Jr., had his feet under a new desk. The 38-year-old executive was getting the feel of his job as top man of the 90-year-old E. W. Bliss Co., Toledo, Ohio. He's the youngest president in the history of the company—whose widespread operations are a challenge to even the most experienced executive. Bliss runs five plants in this country, one in England, one in France; they make hydraulic and mechanical presses, rolling-mill equipment, container machinery.

• **Career**—Edgar has already packed a lot of experience into his career. He left Cornell University's School of Mechanical Engineering during his senior year to take a job with Babcock & Wilcox Co. That was in 1933. In a few months, he had 100 men working for him building parts for Hoover Dam.

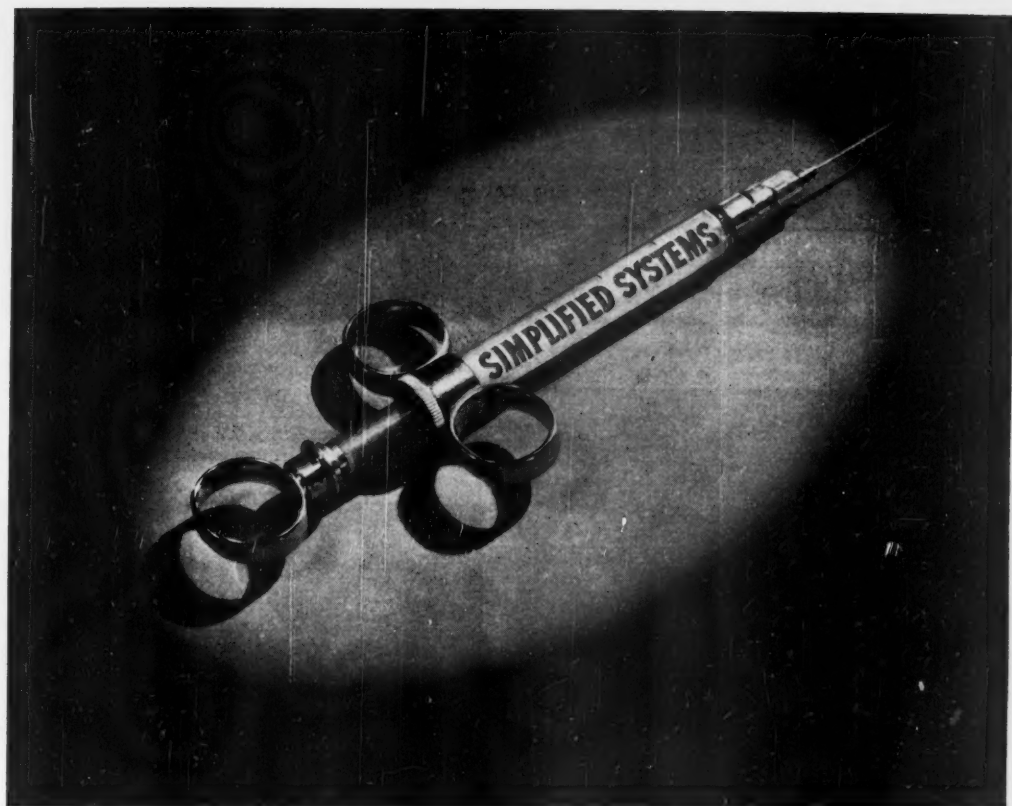
With that job done, Edgar hooked on with Blaw-Knox Co. in 1936, worked on steel-mill equipment. By 1939 he was head of a department, and from 1941 to 1945 he was responsible for 5,000 employees, helped turn out \$100-million worth of war material.

His record attracted attention. H & B American Machine Co. elected him president in 1946. In two years Edgar put the company in the black.

Bliss directors watched his work; this month they pulled him over to their company as president and director, to replace Marshall Smith, now vice-president in charge of foreign operations.

• **Education**—Edgar's practical education started during his high-school days. He spent many a Sunday afternoon at the Carnegie Steel mill at Braddock, Pa., where his dad was chief engineer.

Modest and soft-spoken, Edgar is making no predictions about what he intends to do with Bliss. He takes little personal credit for his rocketlike rise in the business world; he says it's due to continued encouragement from his parents and wife, and to help from business associates like L. E. Joseph, vice-president of Blaw-Knox.



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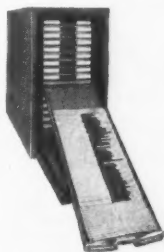
to job assignments due to the completeness and superior accessibility of all essential facts.

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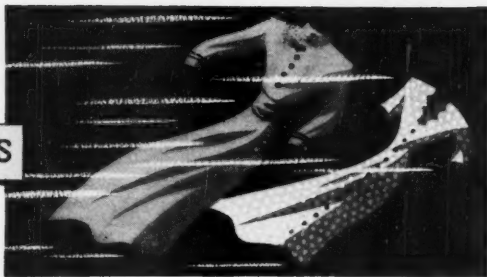


AN ARMY OF SALESMEN is at your command—with "book" telegrams! Dispatch your message simultaneously to a list of prospects or customers. Western Union does all the work for you. Each telegraphic "salesman" gets in, gets a hearing, puts over his point concisely. A telegram gets action as nothing else can.

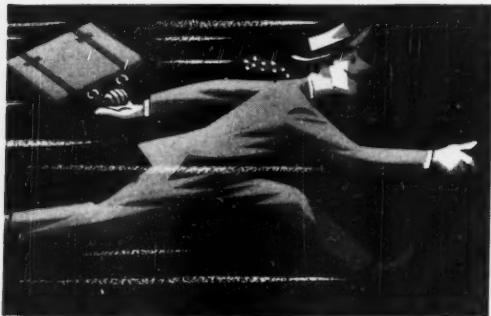
NOTHING ELSE GETS THROUGH,

GETS ACTION...LIKE A...

Telegrams are swift, yet never intrude. Allow time for thought but suggest urgency. Provide a permanent written record, are legally binding.



FOR RETAILERS. Dresses "move out" when telegrams get on the job. A "book" of telegrams—an identical message to your customers—can "scoop" competition, bring fast buying action often more effectively than any other method. For retailers in all lines, "book" telegrams can be a really powerful sales force.



FOR MANUFACTURERS. Salesmen spring into action. When telegrams announce special discounts, price changes, sales contests or any other promotional plan, salesmen really go out and "sell." They know that this urgent yellow blank really "means business."

● Ask a Western Union representative to call and explain how Western Union telegrams can help solve your sales promotional problems and assist you in the daily conduct of your business. Ask, too, about the convenient new Credit Card that enables you, wherever you are, to "charge" your telegrams to your individual or company monthly account.

Other ways telegrams can help you make and save money

Announcing new prices, models, products, branches. Collecting overdue accounts. Telegrams get attention, but without irritation.

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TELEGRAM**

FOR CASH OR
CREDIT
ANYWHERE IN U.S.A.

BUSINESS OUTLOOK

BUSINESS WEEK

FEBRUARY 26, 1949



Industry clearly is thinking in terms of slightly lower 1949 production.

This shows up in the employment figures (page 24).

Estimates just published by the Bureau of Labor Statistics show that factories had fewer production workers in January than at any time since the summer of 1947. The total is put at 12,665,000.

That's down 390,000 from December, and 485,000 from a year ago.

•
Lower employment no longer is confined to the soft-goods industries.

Familiar, of course, is the textile situation. Employment in textiles and apparel is about 135,000 below a year ago.

Now durable goods manufacturers have their problems, too. Employment in steel mills is still the highest ever. Yet users of iron and steel are reducing their payrolls. Over-all, jobs in iron and steel and their products were 39,000 fewer than in January last year.

Some other hard-goods declines: electrical machinery, down 52,000; other machinery, 54,000; furniture and finished lumber products, 45,000.

Transportation equipment (other than autos) was down 44,000.

•
Only ominous thing about the employment figures is that they are below a year ago for the first time. In percentages, the decline is small—3.7% for durable manufacturers, 3.6% for nondurables.

•
New England is experiencing a fair pickup in the shoe industry.

Shops that have been running only two or three days a week generally are resuming five-day operations. Spring business makes the difference.

Windfall: Leather prices have dropped about 20% in the general commodity decline. This makes things look brighter.

There was plenty of room for improvement. Only a month ago, employment in leather and shoe manufacturing was 32,000 below a year ago.

•
Many metal-working lines now have passed the peaks of their booms.

Makers of bearings, who serve a highly diversified field, are feeling this. Both New Departure (General Motors) at Meriden, Conn., and Timken Roller Bearing in Ohio cut their working forces this week.

•
Pressure for metal deliveries has eased ever so slightly—due to the rather general slackening in manufacturing activity.

Use of copper and zinc has been down slightly in the last couple of months. Overproduction of auto replacement batteries has resulted in less demand for lead. Steel inventories are a little better (page 23).

Record output, of course, is helping the steel situation a lot.

•
Price weakness in the nonferrous metals, if it should develop any time soon, is most likely in lead. Lead has had the greatest percentage rise from prewar levels; the metal trade is quick to admit it is too high.

However, stockpiling as well as trade demand still buoys all metals.

•
Industry has just witnessed one of the rare instances of a drop in scrap prices without a weakening in steel operations.

Mills simply have backed away from the scrap market. They are in pretty comfortable shape on supplies. One reason is that their piles of ore

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK
FEBRUARY 26, 1949

for blast furnaces are high; another is scrap imports (150,000 tons came in from Germany in January alone).

So comfortable are many mills that they no longer require customers to return scrap, says *American Machinist*, a McGraw-Hill publication.

Not so long ago, one way you stood a chance of getting steel was to promise a mill approximately the same tonnage of scrap.

Lumber supplies will be much more ample this year than last. And prices, down sharply now, may not rise much as summer boosts demand.

Dealers are much better stocked now than at any time since the end of the war. At the mill level, softwood inventories are up by about a third over a year ago, the National Lumber Manufacturers Assn. says.

Even stocks of oak and maple flooring have greatly increased. Unfilled orders, meanwhile, have been whittled down substantially.

Cross-currents mark the thinking in the mechanical refrigerator line.

Servel (which cools with fire) is cutting back the end of this month because orders have fallen off. The reduction is about 25%.

Westinghouse and General Electric, on the other hand, plan to step up output. Keen competition promises to be the keynote.

Another postwar shift apparently is taking place in the trend of retail sales. And this is leaving the chains out of it.

Department store sales, in 1947 and 1948, didn't fully measure the total gain in retail volume. The reason is simple: They don't handle autos or a proportionate share of other consumers' durable goods.

In January, however, department stores did an ever-so-slightly larger dollar volume than a year ago. Other independent retail stores, at the same time, were falling about 6% behind.

Lumber and building materials dealers did the worst, down 14%. General stores were off 9%; motor vehicle dealers and hardware stores, 7%; furniture and food, 5%.

Apparel shops, backed by strong promotion, marked up a 1% gain.

Candy manufacturers are among the principal gainers from the headlong drop in cocoa prices.

Apparently they didn't take an inventory beating, either. For Chase Candy of St. Louis announces lower prices on candy bars and "penny goods." And Curtis Candy of Chicago will reintroduce its 1¢ Baby Ruth bar.

Fertilizer sales aren't necessarily a barometer of the farm market. Yet they may prove a straw in the wind—and January, normally a big month, shows a decline of 10% in tonnage from a year ago, 7% from 1947.

Sharply expanded use of diesel locomotives (at the expense of steam) is one reason for the declining demand for coal.

Railroads last year used 94.8-million tons of coal. That compares with 109.3-million tons in 1947.

Meanwhile, the electric utilities passed the rails for the first time. They consumed 95.7-tons of coal, up from 86-million in 1947. And the utilities are the main hope of the coal miners as dieselization proceeds.

One of the many ways that
industry makes multiple savings
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Artist's drawing of 1,000-ton oil-hydraulic press in a large Middle Western manufacturing plant. The hydraulic system is protected against corrosion and sludge deposits by the use of Gulf Harmony Oil.

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Highly resistant to oxidation and emulsification, Gulf Harmony Oil lasts indefinitely and resists formation of harmful sludge deposits — insures freedom from jerky feeds, chattering, and loss of accuracy. In the many plants where this quality oil is used, there is tangible evidence of

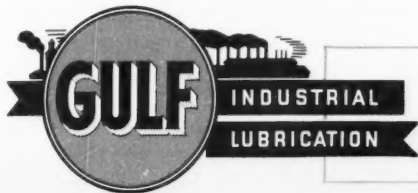
better hydraulic equipment performance, less out-of-service time, fewer part replacements, and lower maintenance costs.

Gulf Harmony Oil is one of more than 400 Gulf quality oils and greases that are helping plant operating men make multiple savings through improved production and lower costs. Make sure your plant is getting the advantage of all recent developments in petroleum science. Write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Engineer to call.

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Helps make machines
produce more at lower cost



A good man to know

THIS man has ideas that can mean more business for you and your dealers. He's the Trade Mark Service representative of your telephone company.

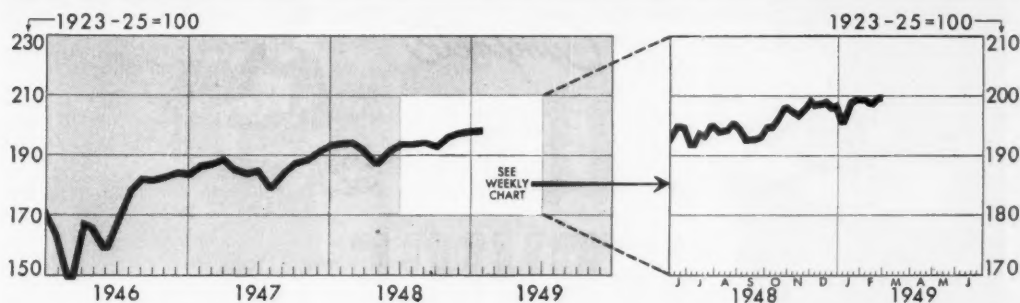
He can show you how Trade Mark Service directs prospects to your authorized dealers and prevents substitution. You simply arrange with him to display your brand name or trade-mark over a list of your dealers' names in the 'yellow pages' of the telephone directory.

And he can show you how to localize your national brand advertising without waste, by using the 'yellow pages' only where you have distribution.

These business-building ideas are worth looking into. You can get in touch with him by simply calling your local telephone business office.



FIGURES OF THE WEEK



Business Week Index (above)

\$ Latest Week Preceding Week Month Ago Year Ago 1941 Average

*200.1 †200.0 199.8 197.4 162.2

PRODUCTION

Steel ingot operations (% of capacity).....	100.3	100.0	101.1	93.6	97.3
Production of automobiles and trucks.....	113,382	†108,911	113,820	110,536	98,236
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)....	\$24,482	\$29,151	\$23,576	\$21,575	\$19,433
Electric power output (million kilowatt-hours).....	5,650	5,722	5,769	5,254	3,130
Crude oil (daily average, 1,000 bbls.).....	5,361	5,330	5,419	5,342	3,842
Bituminous coal (daily average, 1,000 tons).....	1,907	†1,898	1,963	1,872	1,685

TRADE

Miscellaneous and L.C.L. carloadings (daily average, 1,000 cars).....	72	70	73	76	86
All other carloadings (daily average, 1,000 cars).....	44	43	49	46	52
Money in circulation (millions).....	\$27,480	\$27,557	\$27,717	\$28,053	\$9,613
Department store sales (change from same week of preceding year).....	None	-4%	+5%	-3%	+17%
Business failures (Dun & Bradstreet, number).....	180	192	142	107	228

PRICES (Average for the week)

Cost of Living (U. S. Bureau of Labor Statistics, 1935-39 = 100), January..	170.9				
Spot commodity index (Moody's, Dec. 31, 1931=100).....	374.0	374.1	388.3	407.9	198.1
Industrial raw materials (U. S. Bureau of Labor Statistics, Aug., 1939=100)...	268.8	†271.0	278.6	275.1	138.5
Domestic farm products (U. S. Bureau of Labor Statistics, Aug., 1939=100)...	293.4	285.7	302.8	362.9	146.6
Finished steel composite (Steel, ton).....	\$97.77	\$97.77	\$97.77	\$81.14	\$56.73
Scrap steel composite (Iron Age, ton).....	\$37.25	\$37.58	\$40.58	\$40.00	\$19.48
Copper (electrolytic, Connecticut Valley, lb.).....	23,500e	23,500e	23,500e	21,500e	12,022e
Wheat (Kansas City, bu.).....	\$2.20	\$2.14	\$2.24	\$2.43	\$0.99
Sugar (raw, delivered New York, lb.).....	5.61e	5.64e	5.68e	5.54e	3.38e
Cotton (middling, ten designated markets, lb.).....	32.65e	32.49e	32.91e	32.34e	13.94e
Wool tops (New York, lb.).....	\$1.633	\$1.644	\$1.701	\$1.846	\$1.281
Rubber (ribbed smoked sheets, New York, lb.).....	18.50e	18.28e	19.17e	20.34e	22.16e

FINANCE

90 stocks, price index (Standard & Poor's Corp.).....	117.1	*116.1	122.5	111.2	78.0
Medium grade corporate bond yield (30 Baa issues, Moody's).....	3.46%	3.45%	3.44%	3.53%	4.33%
High grade corporate bond yield (30 Aaa issues, Moody's).....	2.71%	2.71%	2.70%	2.84%	2.77%
Call loans renewal rate, N. Y. Stock Exchange (daily average).....	14-14%	14-14%	14-14%	14%	1.00%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate).....	14-14%	14-14%	14-14%	14%	4-4%

BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks.....	46,121	46,553	47,670	47,409	††27,777
Total loans and investments, reporting member banks.....	62,011	62,170	62,879	64,277	††32,309
Commercial and agricultural loans, reporting member banks.....	15,266	15,294	15,414	14,623	††6,963
Securities loans, reporting member banks.....	1,766	1,818	1,639	1,552	††1,038
U. S. gov't and gov't guaranteed obligations held, reporting member banks.....	32,909	33,016	33,749	36,634	††15,999
Other securities held, reporting member banks.....	4,259	4,204	4,181	4,190	††4,303
Excess reserves, all member banks.....	540	570	980	765	5,290
Total federal reserve credit outstanding.....	22,926	22,836	22,999	21,782	2,265

*Preliminary, week ended February 19th.

†Revised.

††Estimate (BW—Jul.12'47,p16)

‡Date for "Latest Week" on each series on request.



FOR THE FIRST TIME

A Complete ICE SERVICE

FOR THE BUSINESS WITH DAILY ICE NEEDS



THE YORK AUTOMATIC ICE MAKER

Produces crystal clear ice cubes automatically
... from running water ... without trays ...
untouched by human hands.

Here is the newest idea in ice service ... Ice cubes and FlakIce Frosty Ribbons frozen at the point of use by these 2 revolutionary York Machines.

They make ice as it is needed ... directly from the water supply ... without trays and untouched by human hands.

For hotels, restaurants, hospitals, institutions and commercial establishments that use ice in quantity, these compact and self-contained units are truly sensational labor-saving and money-saving investments. The Automatic Ice Maker produces up to 8000 crystal clear ice cubes a day which are ideal for icing drinks. The FlakIce Machine produces as much as 1800 lbs. of FlakIce Frosty Ribbons which serve general icing needs, salad displays, ice packs and other crushed or sized ice uses.

Visit your nearest York Distributor, and learn how much these marvelous machines can save you.

York Corporation, York, Pennsylvania.

THE YORK FLAKICE MACHINE

Produces a continuous supply of FlakIce Frosty Ribbons at the flick of a switch ... from your own water supply ... without handling.

Kirkeby Hotels

EXECUTIVE OFFICES
3 WEST 85th STREET
NEW YORK 19, N.Y. CIRCLE 7-2200

January 5, 1940

Mr. John R. Hartsler
Vice President
York Corporation
York, Pennsylvania

Dear Sir:

In view of the fact that we were one of the first users of the York automatic Ice Maker and the York FlakIce Machine, I thought you might be interested in the results we experienced.

During the past year we have installed 24 units of each type. They are in use in all Kirkeby Hotels. — both as to operation and maintenance. The satisfaction of our guests with the ice now supplied in our restaurants, cocktail lounges and room service is most gratifying.

Since these machines were installed our savings in ice costs have averaged over 60 percent. On this basis, we estimate that the units will pay for themselves in a very short time.

In addition to savings, the advantages in having our own independent supply of ice — when we want it and where we want it — are invaluable in our business.

Cordially yours,

Erich B. Utescher

Erich B. Utescher
Supervising Chief Engineer
for THE KIRKEBY HOTELS

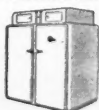
The Gotham - Hampshire House - Sherry-Hatterford - The Warwick
The Warwick - Sunset Tower - The Warwick - The Warwick
Hotel Nacional de Cuba - Havana - Havana - Havana

SAVINGS AS
HIGH AS 60%
REPORTED BY

OTHER MEMBERS OF THE DISTINGUISHED FAMILY OF YORK COMMERCIAL PRODUCTS



YORKAIRE ROOM CONDITIONERS
Self-contained window units for hospitals, hotels, offices and homes.



FROZEN FOOD
CABINETS
For commercial establishments, homes, hospitals, restaurants and institutions.



YORKAIRE
CONDITIONERS
Self-contained units for hospitals, stores, restaurants and offices.

York
refrigeration
air-conditioning

WASHINGTON OUTLOOK



CONGRESS IS GETTING JITTERY over the economic outlook.

Congressmen are notoriously sensitive barometers to changes in public emotions. And they can't be blamed for reacting to a lot of mail from home.

In the past few weeks the flow of letters has been building up—letters from the unemployed, from farmers, from businessmen. Congressmen don't use complicated charts and statistics to help them figure trends; they rely on letters from voters.

And the writers are almost unanimous in saying: We are beginning to feel the pinch.

As if letters weren't enough, congressmen think they see other straws in the wind.

People are beginning to bother their representatives for government jobs. During the war you couldn't get many good men to take, say, a postmastership at Wilmington, Del. Now, there are 13 qualified applicants for the \$7,830 job.

The Civil Service Commission backs up the congressional view with statistics: Volume of applications for white-collar jobs is the greatest since 1940.

Even four-week jobs as census takers have become political plums. The Democratic National Committee wanted to do the hiring. But congressmen thought the jobs were good enough patronage to fight for; they prevailed upon the President to turn the jobs over to them to hand out.

Two congressmen who polled their districts on current issues were surprised at the response they got—answers from 50% of those queried.

It's been their experience that people pay attention to Washington only when times are getting tough.

Congressmen say they don't want to talk the country into a depression. But they find it hard to square the Administration's reassurances with letters telling of layoffs and falling sales and falling prices.

Unless there is an early firming of present business levels, congressmen feel that their attitude has got to be: Wait and see on new taxes and controls; go slow on raising the minimum wage beyond 65¢; get behind the drive to keep farm price supports at 90% of parity.

BIGGER SOCIAL SECURITY proposals by the Administration are running into a Congress which

is already inclined to be cautious on tax changes.

Even so, Truman will get part of the program he sent to Congress this week. There will be some increase in the payroll tax on employers and employees; new people will be covered by the old-age pension system.

Congressional action on specific items will be guided by this rule: You don't pile heavy new taxes on business and consumer incomes if they are declining.

So if recession does come, Congress will be attracted to Truman's proposal for direct relief to all not covered by unemployment insurance. That puts spending money in peoples' pockets quickly.

But extension of social-security coverage—and tax collections—to farm workers, domestic help, and the self-employed will be held down. So will a rise in payroll-tax rates to the full 2%. Those drain off buying power.

POINT FOUR—the President's foreign-development program—is nearing the legislative stage. Congress will be asked first to increase the U. S. contribution to the U.N. welfare agencies.

The idea is to have those agencies which are already functioning in special fields expand their work—to be subcontractors for the U. S. government.

For example, the Food & Agriculture Organization would transplant improved seed and advanced farming methods to underdeveloped areas.

The World Health Organization would introduce sanitary engineering and anti epidemic practices—to keep workers on the job.

The International Labor Organization would inventory technical skills, pinpoint surplus and deficit areas.

The legislation would remove the current \$4.3-million ceiling on U. S. contributions to these three organizations.

This proves that Truman really intends to let the U.N. play its part in the world-development plan.

Also, the proposed legislation would expand the technician-exchange features of the State Dept.'s propaganda and educational programs.

These are the first lines in the blueprint Assistant Secretary of State Thorp's committee is drawing up for Truman. But still to be blocked out are the government measures to create a favorable

WASHINGTON OUTLOOK (Continued)

climate for private investment in the under industrialized areas (page 123).

BASING-POINT PRICING isn't likely to get congressional action this year.

Bills to redefine what delivered-pricing policies are to be considered legal have been introduced, of course. But sentiment in Congress favors going slow until the dust raised by the Cement Institute decision has settled.

Congressional leaders first want to see what the U. S. Supreme Court will say in the rigid steel conduit case. Its key issue: Can the Federal Trade Commission ban a basing-point system without first proving existence of a conspiracy?

What action Congress will take on pricing policies will hinge on the court's decision. So far the court hasn't even begun to hear oral arguments; it can hardly hand down a decision before June.

This would leave little time for consideration of any legislation before Congress adjourns.

There is an outside possibility that Congress may do something like this: Declare a moratorium on FTC delivered-pricing cases—in other words, tell FTC to lay off the whole question for two years. The idea is to let Congress and the country get some perspective.

A Senate small business committee—of the Republican 80th Congress—this week turned in its final report on steel-distribution practices.

The report listed these findings on the operation of the basing-point system while it was in effect:

(1) Consumers located far from a mill have found that steel makers wouldn't take orders that required long freight hauling and heavy freight absorption.

(2) From 1940 to 1947, consumption of hot-rolled sheets in the 12 major steel-producing centers increased by almost 50%; the rest of the country got only 2.7% more.

(3) The industry refused to sell f.o.b. to consumers willing to pay their own freight charges.

THE STATE DEPT. IS WINNING its fight to be the real policy-maker for Germany.

Resignation last week of William Draper, Under Secretary of the Army, was the tipoff. Draper had been in on the occupation almost from the beginning—first as Gen. Clay's economic adviser, then as Clay's partner on the Washington end.

Clay gives the orders in Germany; Draper has backed him up here. Between them, they pretty much ran the show. Though State nominally sets policy for Army to carry out, Clay in fact is making his own decisions. Clay's view: As the man on the spot, he has to call the turn.

State found the Clay-Draper combination a tough one to buck.

Now Draper is gone. And within a month or two Clay is expected to follow.

These events were foreshadowed by appointment of Acheson as Secretary of State. Truman accompanied the appointment with a directive to Acheson to take over German policy.

What differences will this make in German policy? Over-all, the main decisions already have been made—on reparations, on control of Ruhr industry, on a West German government. There won't be any turning back on these.

Acheson's approach to new issues, however, will show up in his handling of, say, Clay's proposal to revive the German shipping industry (BW-Feb. 19'49,p15).

Where does this leave Forrester? He has been Clay's advocate at the White House. And, while Marshall was Secretary of State, Forrester had a big hand in shaping foreign policy.

Talk of Forrester resigning is going the rounds again. This time it sounds like the real thing, probably late in April.

THE OIL INDUSTRY won't get the restrictions on imports it has been seeking as a means of offsetting current surpluses.

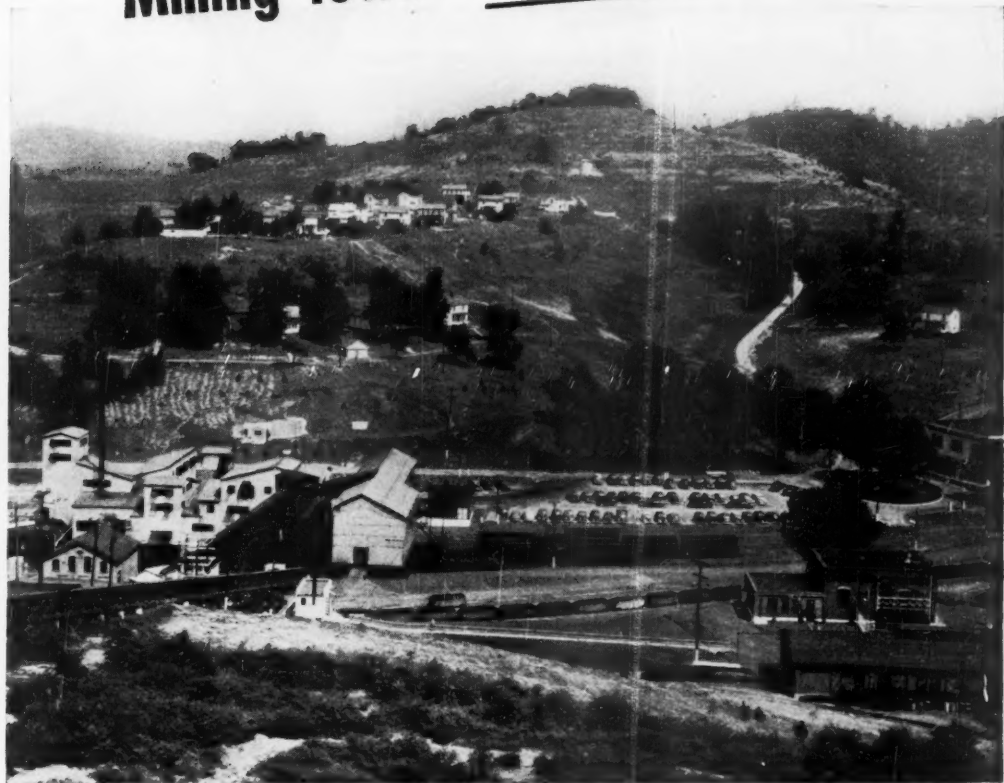
The Tariff Commission can hardly impose import duties at a time when the U. S. is plugging for elimination of world trade barriers. Neither will Congress put on import restrictions at the same time that it broadens the Reciprocal Trade Act.

Some domestic producers have asked restoration of a 21¢-per-bbl. duty and a quota of 213,000 bbl. per day. This would mean a cut in imports of roughly 400,000 bbl. a day.

Accumulating surpluses have already forced cutbacks in domestic production by state regulatory commissions.

What's ahead? Further cutbacks or else cuts in prices.

Mining Town — MODERN STYLE




This pleasant community is a good example of how living as well as working conditions of miners have changed with the development of modern, mechanized mines.

Take the attractive homes in this picture, for instance. While they're nestled high in the scenic hills above the mine mouth and modern preparation plant, obviously there aren't enough of them to house all the mining families required by this big coal operation. But note the centrally located parking lot near the tippie with its many miner-owned cars in which the men have driven to work. For with new, improved roads that make even this rugged country more easily accessible, miners no longer need to live right next to the coal mine. Today, about two-thirds—over 260,000—of the nation's bituminous coal miners either *rent from private landlords or own their own homes*, and home ownership among miners generally continues on the increase.

Modern mining practices are a far cry from those of "pick and shovel" days. Today mines are "blueprinted" far in advance of construction. Backed by facts learned from geological surveys, mining engineers can accurately plan mine construction, without running into costly alterations due to otherwise unexpected faults in rock and coal seam formations.

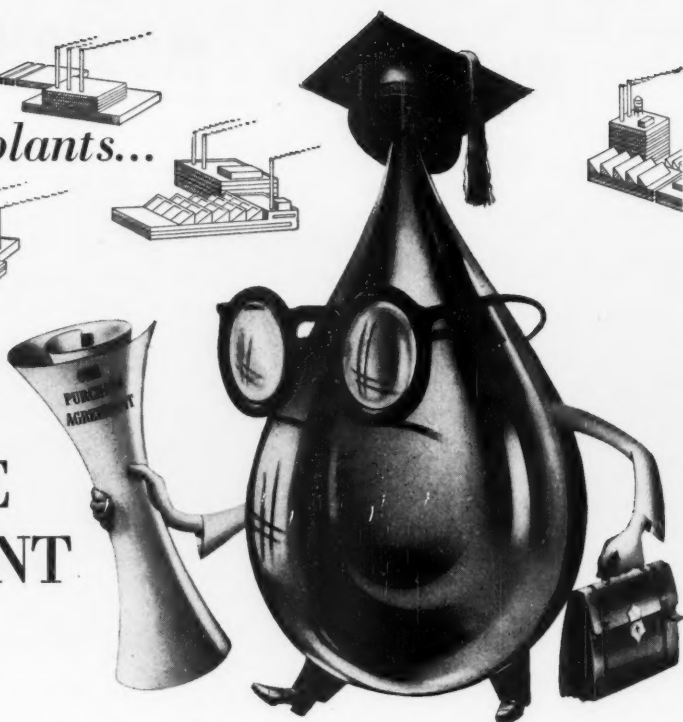
Such production planning underground permits speedy handling of coal from seam to surface for washing, grading, and combining in "continuous flow" preparation plants. The result is mass production of many grades of coal, each giving maximum heat per ton in modern industrial and home heating plants.

BITUMINOUS  COAL
BITUMINOUS COAL INSTITUTE
A DEPARTMENT OF NATIONAL COAL ASSOCIATION
WASHINGTON, D. C.

BITUMINOUS COAL...LIGHTS THE WAY...FUELS THE FIRES...POWERS THE PROGRESS OF AMERICA

For all your plants...

ONE PURCHASE AGREEMENT



plus...OIL with an Engineering Degree!

Result: Increased production... Lower unit costs

SIMPLY make one purchase agreement for Texaco lubricants that are distributed through more than 2300 Texaco Wholesale Distributing Plants in all 48 States.

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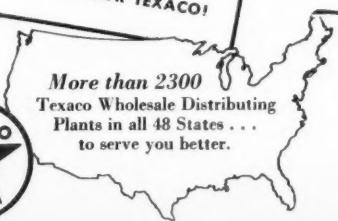
You gain the advantages of the right lubricant, in the right place, at the right time, in the right quantity. Result—*increased production—lower unit costs... economies from uniform supply.*

Get these benefits by calling your nearest Texaco Wholesale Distributing Plant or by writing direct to The Texas Company, 135 East 42nd St., New York 17, N.Y.

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More than 2300
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Plants in all 48 States...
to serve you better.





WIDESPREAD CLEARANCE SALES in January and February, plus cagey buying by retailers, have been . . .

Keeping Inventories Under Control

Pared-down business inventories lessen danger of distress selling, promise quick orders if consumers start buying.

Inventories are in better shape than most businesses realize. That means:

IF PRICES BREAK and trade falls off badly, there will be comparatively little distress selling.

IF CONSUMER BUYING RISES later this year, the stage is set for a rush of business as retailers reorder to fill out their stocks.

• **Strength**—During January and February most inventories were pared down to safe condition. That's an element of strength at a time when business generally shows signs of turning down.

Last week BUSINESS WEEK reporters talked to wholesalers, retailers, and middlemen across the country. They find that the typical businessman is worried about inventories in general—but not about his own. He has heard that other firms or other lines are overstocked. But he is watching his own inventories with an eagle eye, and he isn't keeping any more stock than he needs to run his business. Even if sales fall off he is fairly confident that he can move what he has on hand.

• **December Situation**—The official figures on inventories are too out of date to tell you much one way or the other. They show that during December total business inventories dropped about \$1.4-

billion. At year end, they were \$54-billion against \$55.4-billion at the end of November. This was a little more than the ordinary seasonal drop in stocks. But the difference wasn't big enough to mean much.

At that time there was a possible hint of trouble in retail durable-goods inventories; on a seasonally adjusted basis, they increased during the month. And manufacturers' stocks of finished goods were also climbing in December.

• **Correction**—But since the end of the year, merchants and manufacturers alike have been trying hard to lick their inventories into shape. The lag in retail sales during the first part of December had thrown a scare into them. And the early-February break in commodity prices made them doubly determined to take no chances. They don't know what consumers are going to do in the next few months, and they aren't trying to guess—except where they have to.

The spurt in consumer buying at the end of December kept most retailers and wholesalers from getting stuck with unwieldy stocks of Christmas merchandise. Clearance sales and special promotions during January and early February moved out the odds and ends that remained.

As a result, most businessmen say

they now have stocks down as far as they can get them and still do business. And they intend to stay on that basis. New ordering at present is largely hand-to-mouth.

• **Shorter Inventories**—Apparel stores, for instance, used to order three months in advance. Now they have trimmed down to 30 days. One of the big food chains has cut its stock of canned goods in half since this time last year. A San Francisco department store has lopped 10% off its inventory in comparison with 1948.

The big mail order houses are equally wary. Because they have to make advance commitments, they can't pop in and out of the market the way smaller retailers do. But they are buying on a short-term basis wherever they can. And in their general planning, they assume that prices are turning down.

• **Buyers' Tune**—Cautious buying exasperates the manufacturers. But now that more goods are available, the buyers can call the tune. And the buyers have decided that they are not going to carry any more risk than they have to.

Many companies also have discovered that they are getting faster deliveries from their suppliers. This means that they can handle the same volume of business with smaller shelf stocks.

"Two years ago," says a New York hardware wholesaler, "placing an order was like putting a note in a bottle and throwing it in the ocean. Maybe some-

body would see it and do something about it and maybe they wouldn't. Then I took everything I could get. Now, I get stuff as fast as I order it, and I'm not carrying much on my own."

• **Wait and See**—Wholesalers and retailers aren't necessarily betting on a slump when they tighten up on their inventory policies. Most of them say they just don't know what is going to happen to business. They are simply playing safe. If business turns up suddenly, they are ready to slap new orders on their suppliers. But if things go bad, they won't be stuck with topheavy stocks.

A Kentucky textile man sums up his thinking this way: "I go up to the mills, and those Yankees are smarter than I am, but they don't know what's going to happen either. When my customers ask me, I tell them just to stick to business."

An economist for a big department store chain argues that this sort of uncertainty about business always has a healthy effect on inventories. "A decent amount of worry," he says, "is the best thing in the world. If everybody plans for a banner year and rising prices, they start gambling in inventory and end up overstocked. If everybody expects business to go to pot, they cut off all new orders, and that plays hob with the manufacturers. It's when they don't know what's going to happen and try to steer down the middle that they stand the best chance of coming out right."

Other economists point out that overloaded inventories are one of the main things that can turn an orderly business readjustment into a real crash. In 1920, the break in prices wiped out thousands of companies that were gambling in merchandise. And the distress selling that resulted drove prices down just that much farther.

But if there is any topheaviness in inventories now, businessmen can't find it.

• **Appliance Trouble**—There seems to be one exception to this comfortable inventory position—major appliances.

Appliance sales suddenly went sour last fall. And before anyone could put on the brakes, stocks began to pile up all the way from retailer to manufacturer. Small appliances such as toasters, irons, clocks are moving well again by now. But the major appliances—refrigerators, washers, ranges—are still slow.

Dealers are overstocked in practically all parts of the country. Many blame their suppliers. They say that when things went bad the wholesalers forced them to take big inventories under threat of cutting them off from all future deliveries.

In Cincinnati, an appliance man sums up his present situation tersely: "It's rough, friend."

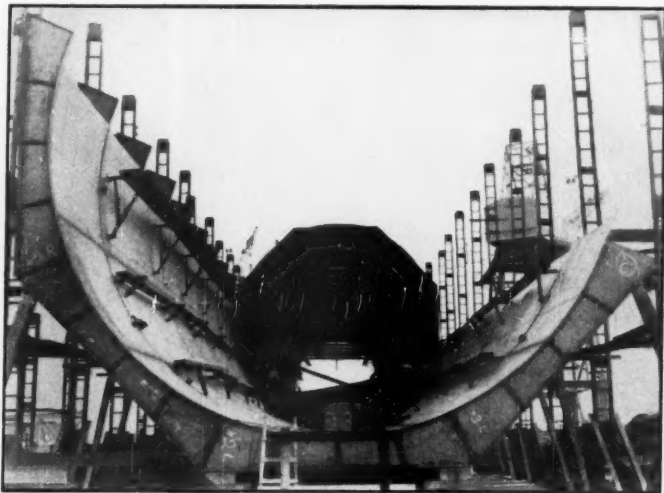
And a Cleveland dealer is issuing his

own declaration of independence: "The only economic excuse for a supply house is to carry stock. From now on that is just what they are going to have to do." Another Cleveland man is buying only floor samples. When he gets an order, he tells his wholesaler to ship from his stock.

• **It's All Relative**—In other lines, however, retailers and wholesalers think they have stocks geared closely to sales. They could be wrong, of course. A sudden

drop in sales can make even the most carefully controlled inventory look overloaded.

But wherever sales have faltered, merchants haven't lost much time getting their stocks back in line. Last fall, for instance, men's apparel began to back up. Since then retailers have been taking markdowns and moving out the excess stocks in special sales. Today most of them say they are feeling "comfortable" again.



Prefabricating a Tunnel and . . .



. . . Moving It 400 Miles by Water

A two-lane vehicular tunnel to run under the Houston Ship Canal at Pasadena, Tex., is being built in Pascagoula, Miss.—400 miles away. Ingalls Shipbuilding Corp. is constructing four steel-tube sections that will make up the underwater part of the tunnel. Two have already arrived in Texas, where Merritt-Chapman & Scott, general

contractor, will install them and build the approaches. Each section, such as the one shown above, weighs about 490 tons, is 375 ft. long, and is over 35 ft. in diameter. The prefabricated sections are launched on regular marine ways. Palmer & Baker, Inc., of Mobile, Ala., is supervising the whole job.

Plugging a Two-Way Bill for Stability

Inflation is still the Administration's theme song, but it can't ignore chances that a dip may come.

The Administration delivered a bulky package to Congress last week. Wrapped up in it was an assortment of controls over, and prods to, business—neatly tagged with a brand-new label.

There was nothing new about the contents, though. Despite recent signs of a business slowdown, the President and his advisers have consistently warned against the danger of inflation; after this kind of talk, the Administration was expected to come up with an outright anti-inflation bill. And that's what the bill is—plus a partial hedge against deflation.

• **Two-Way Mechanism**—From its declaration of intent, you get the feeling that the bill is actually designed to fight deflation—"to implement established national policy of promoting maximum employment, production, and purchasing power."

Its backers, of course, are trying to sell it as good for whatever happens to be the matter with the economy at any particular time. In fact, the bill, introduced by Rep. Brent Spence (D., Ky.), is titled the Economic Stability Act of 1949.

IN TIMES OF INFLATION, price controls, allocations, and power to force expansion of essential industries would operate directly to: (1) hold down prices, and (2) ease shortages until supply caught up with demand.

IN TIMES OF DEFLATION, the mechanism is supposed to work in reverse gear. Authority to get plants built would be extended to cover government stockpile purchase of critical commodities when sales slump.

Of course, the big question on the deflation side is this: Would the mechanism work fast enough, or go far enough, to head off a sharp business decline?

• **Advisers Split**—The bill's dual personality reflects a split in Administration thinking. Many of the President's economic policy-makers are still going on the assumption that the postwar inflation is not over. This group includes Leon Keyserling (picture) and John Clark of the Council of Economic Advisers, the Federal Reserve Board, and Agriculture and Labor Dept. experts. They fought to make the economic bill primarily an anti-inflationary one.

But there are many others who are



URGING MORE CONTROLS, Economic Adviser Keyserling says inflation still threatens

not so optimistic about the future. Chairman Edwin G. Nourse of the Council of Economic Advisers and Commerce Dept. economists look for a gradual downtrend. So do a majority of congressmen.

The bill draft submitted to Congress, then, includes an element of lip-service paid by the optimists to the pessimists in exchange for the bill the optimists desire.

• **Real Battle Coming**—The battles in the bill-drafting rooms of the executive departments were just curtain-raiders to those that are sure to be waged in Congress. Despite the ingenuity with which the separate elements of the bill were welded into a cohesive program, Congressional committees are sure to take a close and skeptical look at the provisions, one by one.

I. Allocations and Priorities

The Spence bill provides for extension of the voluntary-allocations programs now existing under Public Law 395—the Taft-Wolcott act. The ban on price-fixing would remain.

But the President at any time could determine that more stringent action was needed to relieve or prevent a shortage of a critical commodity. In that event, he would have the power to issue priorities and make mandatory allocations.

II. Prices and Wages

The President would have the power to require that any seller give 60-day notice of intention to raise prices. In

effect, it would be a cooling-off period for business—designed to give public opinion a chance to dissuade the seller from raising his price.

But the President's authority would go even further: He would have the unlimited right to fix and adjust maximum-price regulations, keep them on as long as he felt necessary.

The bill would also give the President power to regulate commodity speculation—to prohibit manipulative practices and hoarding.

Farmers would get this protection: No maximum price could be fixed at less than the parity price for any given commodity.

The Spence bill would authorize the President to appoint a six-man tripartite temporary wage board to pass on all wage raises. Four grounds for boosts would be recognized:

- (1) Increases in the cost of living.
- (2) Inequities in the wage structure.
- (3) Substandards of living.
- (4) The need to keep essential production going.

Employers with products that had price ceilings would have to wait six months before passing any increases in wage rates on to consumers in the form of higher prices.

III. Promotion of Production

To overcome shortages of any commodity he deemed critical, the stability bill would authorize the President to:

- (1) Study the demand and supply situation to determine what could or should be done.
- (2) Set up or finance research and

development projects, with a view to increasing output of existing plants.

(3) Procure needed supplies abroad for stockpiling or resale in the U. S.—at a loss, if necessary.

(4) Lend up to 75% of the cost of plant and equipment to industry or to state governments to expand capacity (in hard times, the President could waive payments of interest and principal).

(5) Construct new capacity directly, or indirectly under contract with individual companies.

IV. The Bill's Chances

It's too early to say yet what will happen when the Spence bill comes up for debate. It will certainly fare better in the House than in the Senate. But even House members are uneasy about soft spots that are showing in business; they're unwilling to take any action that would hurt confidence or hasten a recession.

This seems obvious now: Price and wage ceilings and government construction of, say, steel plants don't have the ghost of a chance.

On the other hand, continuation of the present voluntary-allotments program (with perhaps mandatory backup) and a steel-industry study have a better than even prospect.

For the other provisions in the bill, only time—and the business situation—can tell.

STEER BUILDERS' RESEARCH

What's the quickest way to better buildings—at lower cost? That's the \$64-question tugging at the building trade these days. Almost everyone has research feelers out to find the answers, so there's often duplication, wasted time and effort.

The lack of coordination has spurred the government-chartered National Academy of Sciences and its operating agency, the National Research Council, to set up a Building Research Advisory Board. The new board's main objectives: to find out just what's being done, put first things first.

The new, 27-man board held its organizational meeting in Washington last week. As its first task, it will try to work out a definition of the research needs of the building business. Next step: Inducing someone to undertake those phases that will pay off fastest in producing better structures at lower cost.

BRAB's initial program is on a long-term (five-year) basis. Funds for its \$100,000-a-year administrative budget will be supplied by the Construction Industry Advisory Council, which operates under the U. S. Chamber of Commerce.



PROSPECTOR Campbell points to uranium-rich pitchblende vein. Such finds spur . . .

The 1949 Uranium Rush

Canadian geologist's discovery of pitchblende in Ontario draws uranium hunters. Canada offers price floors as incentive. AEC has program to stir up development of U.S. uranium sources.

Spring thaws this year will fire the starting-gun for one of the biggest prospecting rushes since Klondike days. When melting snows bare the ground, swarms of amateur and professional mineral-hunters will comb the continent with picks, shovels and Geiger counters (radioactivity detectors). They will be looking for uranium.

• **Big Strike**—First place that these modern-day '49ers will head for is the rock-bound Canadian shore of Lake Superior, about 70 miles north of Sault Ste. Marie, Ontario. That's where Robert Campbell (picture), a young Canadian geologist, backed by a Toronto mining syndicate, struck a thick vein of pitchblende (the primary source of uranium) last fall.

Campbell's find was no accident. He picked a clew out of a geological journal written in 1847 and followed it. Last summer he spent sweeping the cliffs of Theano Point on the eastern shore of Lake Superior, listening for tell-tale clicks from his Geiger counter. On Oct. 8, the clicks became a chatter, finally a roar. Campbell was standing over the same shiny, black pitchblende vein that was described in the geological journal over a hundred years ago. The strike was "hot rock"—assayed 59.1% uranium.

• **Rush Is On**—It didn't take long for the word to spread around. By No-

vember, some 300 prospectors had swarmed to the area, pitched tents, and were probing the rocks with Geiger counters.

Claims were staked thick and fast. Prospectors filed an average of 75 a day, 200 in the first week. By the time blizzards halted the hunt, the Canadian government had some 1,700 claims on file. And Campbell's syndicate—which sold unit participations for \$25 each at the start—was reportedly quoting \$1,000 a share recently.

Yet up to now, there's no real evidence of a workable commercial uranium deposit in the region. Prospectors will have to wait until snow melts off to find out just what they have got.

• **For Private Operators**—And the Canadian government will be anxiously watching the results, for this is the first uranium strike since the government removed its blanket control on title to radioactive minerals last spring. At that time, Canada turned over to private enterprise the job of finding uranium and digging it out.

As an inducement, it guaranteed to pay for seven years a minimum rate of \$2.75 a lb. for ores containing at least 10% uranium.

• **AEC Acts**—In the United States, Canada's sole market for uranium, the Atomic Energy Commission is putting on a similar program to stimulate pri-

vate development of uranium sources. AEC's three-pronged incentive plan includes:

(1) A \$10,000 bonus for discovery and production of high-grade uranium ores from new domestic deposits;

(2) A ten-year guaranteed minimum price of \$3.50 a lb. for high-grade uranium-bearing ores;

(3) A five-year guaranteed minimum price for low-grade uranium-bearing ores.

AEC says that though its prices look higher than Canadian rates, they are really about the equivalent. The AEC's \$3.50 does not include a refining charge; this will depend on an analysis of the ore.

• **Colorado Ore**—But these high prices are for high-grade or primary uranium ores only. And so far, the only uranium actually produced in the U.S. comes from low-grade or secondary ores, dug from the famed silver- and vanadium-mining district of the Colorado Plateau in western Colorado.

Colorado ores have a uranium content averaging 0.2%. That makes them a poor cousin to the high-grade pitchblende ores of Canada and the Belgian Congo, which contain up to 60% uranium. Low-grade ores need a lot of expensive refining and concentrating.

• **Discrimination?**—That's why Colorado ores are not included in AEC's \$10,000 bonus offer; it's why they get only the five-year guaranteed minimum price instead of the ten-year guarantee. Colorado independent miners think that this is unfair discrimination.

Another gripe from Colorado's independent miners: Why doesn't AEC publish the prices it is paying for refined uranium that it buys from U.S. Vanadium Corp., subsidiary of Union Carbide & Carbon Corp., and Vanadium Corp. of America? (These two companies buy uranium-vanadium ores from the independents, refine them, and sell to AEC.) The commission replies that it buys large amounts abroad—and all prices are set by negotiation. Publishing prices it pays for Colorado uranium, AEC says, would hamper its bargaining position abroad.

But the commission expects to have three refining mills of its own operating under private contract in the Plateau area by the end of the year. When they get going, AEC figures it can check operating costs in its own plants against private refiners, make sure prices are fair.

• **A Find**—One possible exception to the rule of low-grade uranium ores on the Colorado Plateau is a mine at Caribou, where a vein of high-grade pitchblende was discovered recently. But according to David E. Lilienthal, chairman of AEC, reports that the Caribou find alone makes U.S. independent of imports of uranium are "a gross exaggeration."

Steel Supplies: Much Easier

For the first time since end of the war, mills are getting cancellations and order cutbacks. Warehousemen say they need more variety in their stocks. Consumers not so pinched.

Steel mills, warehouses, and consumers are feeling less pressure on supplies this week. Some of the easiness is based on fact—the supply of steel is getting better (BW—Jan. 8 '49, p19). Some is grounded only on the hope that in the near future there will be enough for everybody.

• **Peak Production**—Supplies are easier and hopes are brighter for the same reason: Steel production is running at super-speed. The American Iron & Steel Institute estimated production this week at a rate of 100.3% of capacity. That's equal to 1,849,000 tons of raw steel.

Output has been at that high level for quite a while—the rate has been 100% or better each week except one since the turn of the year. All raw materials are plentiful. Condition of the operating equipment is said to be tip-top. So continued peak production seems a sure thing.

Such large tonnages already have knocked the peak off demand. Eventually they should bring total supply and demand into balance. Even now, some

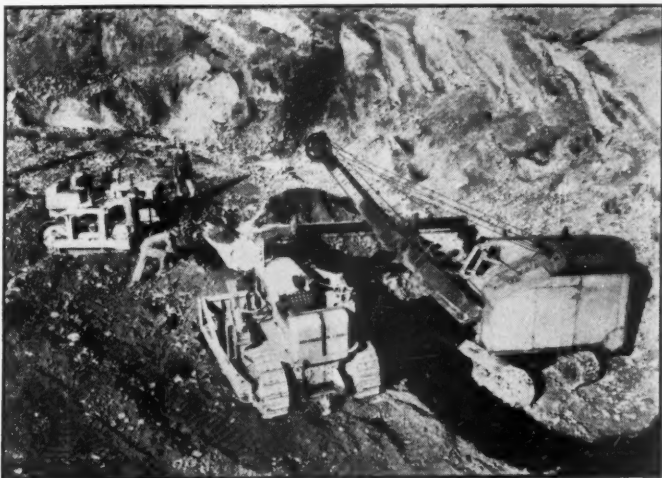
kinds of steel are in fair supply. And the list of hard-to-get steel is narrowing rapidly.

• **Survey**—A BUSINESS WEEK survey of key producing and consuming points this week shows the unevenness of the current situation, as well as the improved future prospects. The survey brings out these details at the mill, warehouse, and consumer levels:

I. Mill Level

The mills recently began to get order cutbacks and cancellations for the first time since the war. Tonnage thus freed is going to other customers in excess of their quotas. These "tonnage bonuses," of course, could vanish at any time; so far, though, they are going up rather than down.

Some freight car builders are canceling tonnages because of poor backlogs; oil field tank needs have lessened; stove makers are not taking all they could get. Allegheny-Ludlum's cut of \$35 to \$50 per ton on silicon sheets and strip used by the electrical-goods industry last week



Scrap Steel From Slag Piles

Steel companies—like Jones & Laughlin's Cleveland works—are reaping a rich scrap harvest from their own backyards. Mountains of slag, residue skimmed from cooking steel, have been piling up beside steel mills for years. Now steelmen are hiring

contractors to paw through their dump heaps, cull out the scrap to mix with pig iron for new steel. Currently, these slag piles are yielding some 2-million tons of scrap yearly. Added with pig, that means an extra 4-million tons of steel production.

shows the lower demand for this material. Cold finished bars, standard pipe, and wire products have soft market spots. Alloy steels have been easy for some time, but there has been some evidence lately of a demand pickup for stainless grades.

II. Warehouse Level

The warehouses are benefiting from the easier situation at the mill. Often they are now offered extra shipments not included in their allocations. Even so, warehouse inventories are generally scant. Between 3-million and 4-million tons of steel will be needed for the warehouse industry to build up adequate stocks.

Warehousemen gripe that the mills are still not turning out a complete line of products. That goes especially for certain sizes of bar stock, also certain galvanized items. One midwestern operator says he is able to stock only 35% of the items he carried prewar; a southern outlet has about 60% of prewar variety.

• **Uneven Supplies**—Bars, sheet, plate, shapes, and pipe are scarce at nearly all warehouses. Cold-finished bars are getting more plentiful because of cutbacks at the mill by nut and bolt makers. Pipe is getting a little easier. Some warehousemen are getting their hands on sheets in an unorthodox way: A few mill customers are not canceling excess requirements and are offering sheets in 500-ton and 1,000-ton lots at mill prices to some warehouses.

Warehouses generally are able to fill the bulk of the orders they are taking. But they are only taking orders for which they have or will get the steel.

While inventories are not up to par, says one Cleveland man, orders can be filled much better than a year ago. On the Pacific Coast, inventories of eastern-rolled sizes are low while coast-rolled items are adequate. A supplier in the Buffalo area says his overall inventory situation has not improved since last June; but bars are a little easier to get in the first quarter of 1949. Two out of three Chicago warehouses claim that their inventories are in no better shape than a year ago.

III. Consumer Level

At the consumer level, steel supplies are also somewhat better.

One large consumer in the Northwest says the situation is like the present inventory of shirts and shoes in retail stores—there's plenty of stock in common sizes, but still some scarcity in the odd ones. A year ago that company was spending up to \$1-million annually in premiums to get certain steels. That kind of buying has been radically reduced. Until three months ago, the

company was cutting up steel in the morning for fabrication the same afternoon. Now it has from two to three weeks' supply on hand in the more common steels.

An eastern consumer is now getting more steel both from mill sources and from special deals. He is getting extra sheet at premium prices, and has picked up some pipe from warehouses recently. He plans to increase production of some of his lines this year, and those plans are firm because the added steel is already lined up.

• **Detroit Picture**—Sheet steel inventories of Detroit auto companies are faintly better than they have been. But all, of course, are seeking bigger mill quotas.

Parts makers supplying independent producers are able to operate on a little better than hand-to-mouth basis, hence are not screaming so loudly as they have for steel.

Hot-rolled bars of forging quality are a major bother, but cold-drawn bars and wire products have eased. So has electric welded tubing.

There are about as many conversion deals as ever before set up for the second quarter. However, the pressure for those deals seems slackening. All companies indicate they will take a very careful look before scheduling more deals in the third quarter. Kaiser-Frazer has cut out considerable premium steel buying through its new arrangement with Republic Steel Corp. That contract provides for 7,000 tons of cold-rolled sheet per month, and 12,000 tons of pig iron a month at mill prices.

IV. Washington Level

The steel industry meanwhile has come under attack again from Washington.

This time the criticism is aimed at distribution. The 80th Congress small business committee claims (1) steel-makers are now shipping to their own subsidiaries a large part of the increased output that would otherwise go to independents; (2) an increase in proportion of the steel flowing to warehouses is going to the steel companies' own warehouses; (3) steel companies have greatly increased output of the more expensive types of steel; (4) steel companies have been cutting distribution in those areas which are distant from the centers of steel production.

The charges are made by a Republican dominated committee in a report "Changes in Distribution of Steel, 1940-47." The committee says the kind of distribution pattern developed in that period is unhealthy for economic growth. So, the committee says, it hopes the industry will risk the kind of government action to which the companies are opposed.

Employment Dip

Drop from December to January in nonfarm jobs was 1,740,000, says BLS. That's a bit more than seasonal.

Nonfarm employment—at the highest level on record in December—dropped more than seasonally to 44,346,000 in January. So said the Bureau of Labor Statistics this week. Employment went down about 1,740,000 in a month, and stands 250,000 below a year earlier.

Large declines from December to January are normal, the bureau points out. Winter weather retards construction; temporary Christmas workers in the retail field are laid off; ditto holiday postal employees.

• **Broader Drops**—This year, however, the decline spread beyond these lines. BLS notes that "in industries where downward adjustments . . . have been taking place during 1948, further declines are reported in most instances. There were also indications of slackening in the rate of activity in other industries."

The BLS employment estimates are a little more recent than the labor-force figures compiled by the Bureau of the Census. (Census counts noses at the end of the first full week of each month, BLS at midmonth.) The two totals differ in that Census includes the self-employed, proprietors, and domestics; BLS does not. Both reports point up the same trends.

• **Down All Around**—The declines from December to January reported by BLS are sharper than they were a year ago in every major category. The deepest was an employment reduction of slightly more than 750,000 in trade. Construction was down by nearly 200,000; government employment, by more than 230,000.

A drop which has created a good deal of attention was that of just over 400,000 in manufacturing. The high was approximately 16,700,000 in September. Modest reductions had carried that down to 16,278,000 in December. The January drop leaves employment at 15,875,000—392,000 lower than a year earlier.

• **Slackening**—The more than seasonal drop from December to January is generally credited to some slackening in trade and industry. It is nevertheless true that in 1948 there was a perpendicular rise in nonfarm employment from 44,299,000 in April to the December figure of nearly 46,100,000. The present level still slightly tops the figure for April and other low months last spring.



FOR THE ADMINISTRATION

Secretary of Labor Tobin opened hearings before the Senate committee by submitting a bill restoring the Wagner act



FOR INDUSTRY

Ira Mosher of N.A.M. made the case for employers who favor keeping T-H. This week Senate opinion was crystallizing (page 116)

Telling Congress How to Write Labor Law



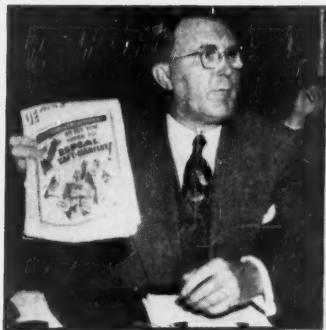
FOR THE A.F.L.

President Green called for T-H repeal, refused to suggest any changes in original Wagner act which might be acceptable to him



AN INDEPENDENT EXPERT

William H. Davis, former chairman of the National War Labor Board, had some favorable things to say about plant seizures



FROM THE FIRING LINE

Charles E. Wilson, General Electric president, up against a left-wing union in his plants, wants T-H features kept



FOR THE C.I.O.

Arthur Goldberg, C.I.O. counsel, joined A.F.L. witnesses in calling for passage of the Administration's bill unamended



FOR FOREMAN'S UNION

Carl Brown, Foreman's Assn. of America official, asked for removal of the curb on supervisory unions which is in T-H



FOR MINING INDUSTRY

Howard I. Young, president of American Mining Congress, asked that non-Communist affidavit requirement be kept in the law



SECRETARIES' OFFICERS: Fredda Harris (left), treasurer; Clara Krueger, secretary

Setting Secretarial Standards

National association is working out exams for members; it hopes to get states to give them status like C.P.A.'s.

Accountants have them. Life underwriters have them. Now it's your secretary. "If accountants can get certificates and call themselves C.P.A.'s," she argues, "why can't secretaries get certificates and be C.P.S.'s—Certified Professional Secretaries?"

Raising the standards of private secretaries by some means like this has been the aim of a growing number of secretaries for several years. Leading the way in doing something about it is the National Secretaries Assn., which represents some 11,000 across the country. This week in Kansas City the association's executive board (working secretaries from Buffalo to Denver) got down to the heart of the matter: ways and means of establishing a genuine certification procedure for its members.

• **Drafting Tests**—The main job is to work out a thorough-going test.

When the test is ready, several already recognized secretaries will take it. With the results evaluated, educators will help whip the examination into final form. Then the organization will have a really big task: lobbying to get states to put a C.P.S. on a par with a C.P.A. Since the association is neither wealthy nor powerful, the secretaries realize they may have tough sledding.

• **Qualifications**—The National Secretaries Assn. was formed in Kansas City in 1942. The first year 1,500 ambitious secretaries joined up. In its second year



PRESIDENT: Margaret O. Dewyr

it doubled its roster. But even with its present membership, the association is pretty choosy about who it takes in. Just plain stenographers don't qualify. A woman has to be a full-fledged secretary to be eligible. And by this, the association means that she has to be able to take over much of her boss's work while he's away, and run the administrative end of his office when he's in town.

• **Officers**—The national president of the association is Mrs. Margaret O. Dewyr, secretary to the president of Gleasner Corp., Buffalo.

Most of the association's administrative work is handled from Kansas City by Miss Clara B. Krueger, national ex-

ecutive secretary, who did much of the work in drafting preliminary tests, and Miss Fredda Harris, national treasurer.

• **Exclusive Competition**—For downright exclusiveness, however, N.S.A. still has quite a way to go before it catches up with another organization in the field: the Scrappie Secretaries of America. This is a closed body of 100 secretaries to very important persons in New York state.

It's primarily a social organization; members get together over cocktails and suppers in New York several times a year. But it undoubtedly makes the secretary to one v.i.p. look pretty indispensable when her friendship with the secretary to another v.i.p. helps her wangle special treatment for her boss.

TV Turns Bankers' Aid For Major London Firm

Television's going to work for a famous London bank.

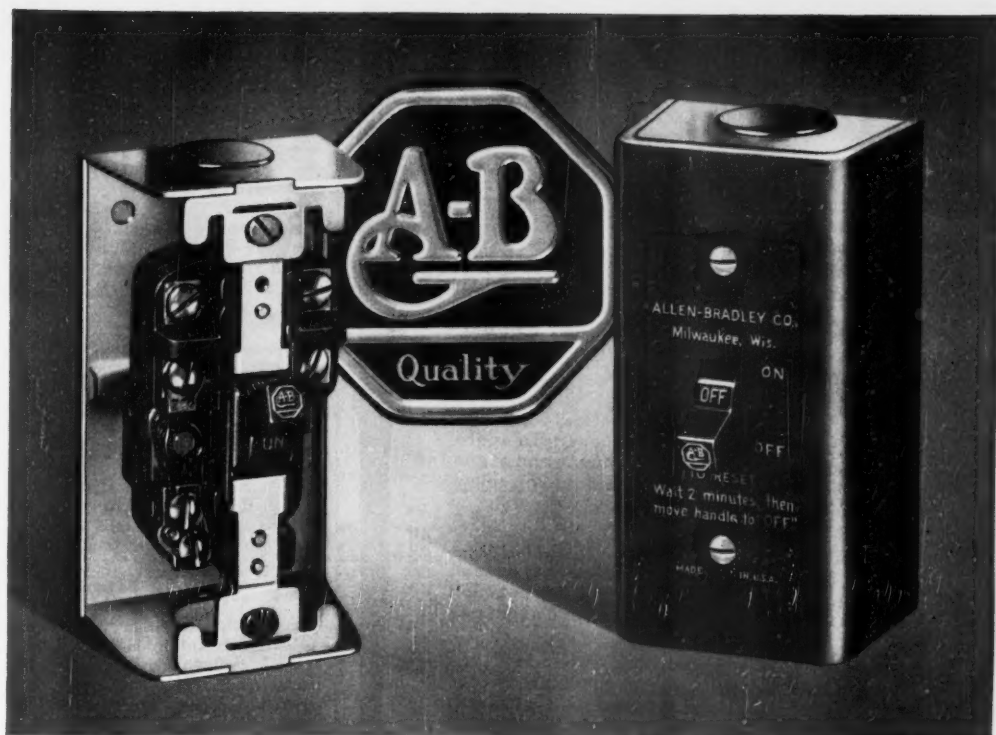
The bank (which insists on remaining unidentified) is installing a TV circuit between its main office and the country town, 25 miles away, where it stores its records. Over TV, executives in the main office can see all the records in the storage vault at a moment's notice.

• **How It Works**—Say Mr. X comes into the bank for a loan. The manager needs to know what securities he has in his account. He rings up the record office (whether by telephone or by private microwave voice-radio circuit, the bank hasn't decided) and asks to see a record of Mr. X's holdings.

The clerk at the storage vault digs up the list, places it in front of the television camera. The manager looks over the record on the receiving screen in his office, and decides whether to O.K. the loan.

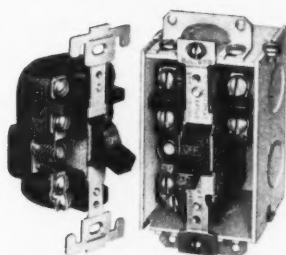
• **Less Storage**—Big advantage of the system is that it cuts out storage of duplicate records. The bank figures storage rents in the metropolitan area come to about \$8 a sq. ft.; in the country, they are only about 35¢. And since all records are in one place, clerical expense, theft, and fire risks are also cut.

• **Protection**—Secrecy is important, and the system will be double-checked to insure it. The Postmaster General kept this in mind when he gave the go-ahead for such projects late last year. He allocated a band of high-frequency microwave lengths for commercial use, under license. Since the band is of shorter wavelength than the normal television range, there is little danger of tapping. And, of course, the wavelength of any individual system is top secret. "Scrambling" could be added as a security measure, but the bank doesn't think it will be necessary.



Quality Motor Starting Switch

WITH RELIABLE OVERLOAD PROTECTION



Bulletin 600 Size C Switch
fits any standard switch box

The National Electrical Code is becoming more strict. All motors of one horsepower or less . . . when *automatically started* . . . must be protected by *automatic overload breakers*.

The Allen-Bradley Bulletin 600 Switch offers accurate thermal overload protection . . . it cannot be reset until overload is cleared. It fits any standard switch box.

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SOLENOID MOTOR CONTROL
QUALITY

Memo

To: Company Presidents,
Treasurers and
Comptrollers

As an executive of your company, you'll want to know about a new means to govern completely every cent disbursed by your company for payrolls, payables and dividends.

You'll find this means in the Todd Bank Balance Controller which, in a single operation, adds, lists, proves, counts and signs your checks and deposits them in a locked container.

This unique machine eliminates the hazardous period between check preparation and signing. It closes the dangerous gap between validations or proof of amounts and signing.

If earlier work has been done on accounting, bookkeeping or tabulating machines, this Controller, at signing time, will give you a proof on the previously reported totals, and a check on machine error or manipulation.

The controller--a fast, easy-to-operate keyboard dual unit--will serve you, disbursement-wise, as cash registers serve retailers on the income side. It affords you full peace of mind, while saving you time.

For full information, please fill out and mail the coupon below. We'll gladly give the facts promptly.



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Please send me the facts about the new Todd Bank Balance Controller, without cost or obligation to me.

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BW-2-26

BUSINESS BRIEFS

Chrysler Corp. is raising factory retail prices on its various models by an average of 6.66% over those of previous comparable cars. The company's base-price car is the Plymouth deluxe three-passenger coupe, \$1,295 at Detroit; it formerly was \$1,272 (these prices don't include taxes, freight, preparation charges, or extras). Near the higher-priced Plymouths is the three-passenger Dodge Wayfarer (page 97); its factory retail price is \$1,525.

Reynolds' coup in setting up a long-term contract with Wisconsin Electric Cooperative to supply aluminum conductor needs of REA co-ops (BW-Feb. 12'49,p22) has stirred up the trade. Kaiser's Permanente Corp. is flooding power people with offers to supply up to 15-million lb. of conductor for fourth-quarter delivery at a price about 1¢ a lb. above Alcoa, nearly 3¢ under Reynolds. Meanwhile, other electrical supply outfits are pressing W.E.C. for exclusive contracts like Reynolds'.

Free fuel for two years is the bait for building a plant in Houston County, Texas. A natural-gas operator, Gier-Jackson, will give 1-million cu. ft. of gas daily to any new industry with steady jobs for more than 100 people.

New motor vehicles licensed last year came to 4,526,126--almost 120,000 better than the previous banner year of 1929. Factory sales totaled about 1-million more than registrations; most of these (700,000) went abroad.

To level seasonal dips in its regular line, Snyder Tool & Engineering has purchased Arthur Colton Co. Snyder is a special-machinery builder that turns out equipment for the auto industry; Colton is a 65-year-old producer of packaging machinery.

Philco has chosen sides in the battle of the phonograph discs (BW-Jan.22 '49,p82). Vice-president John M. Otter says that the public and trade will be "thoroughly confused and inconvenienced" by the new 45-r.p.m. records--meaning RCA's. Philco isn't planning to make players for them, though it is making them for Columbia's 33½-r.p.m. microgrooves.

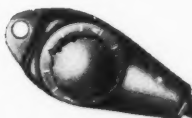
Bell & Howell has offered \$325,000 for the patents, formulas, and partly finished Rochester (N. Y.) plant of Kryptar Corp. Kryptar's attempt to break into the amateur roll-film business was stymied by plant fires, other difficulties (BW-Sep.25'48,p28). B. & H. may spend \$750,000 on expansion.



Now...Automatic Steering for small craft with Sperry



Magnetic Compass Pilot



FEATURES:

Dependability: Few moving parts in control system. Power unit or steering engine is heavy duty, electrically driven, compact.

Easy to Operate: Set course with one turn of Control knob. Boat remains on course until changed.

Economy: Helmsman is relieved for other duties. Straighter steering results in fuel savings.

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NOW... for the first time... Sperry automatic steering from a standard magnetic compass is brought to the small-boat owner. Fishing vessels, work boats and pleasure craft can now obtain many of the advantages that larger ships enjoy from the larger Sperry Gyro-Pilot installations.

Automatic steering is simple with the MAGNETIC COMPASS PILOT. You "dial your course" by turning the Control knob on top of the compass to the desired heading. A portable Remote Control device permits you to move around the vessel. With it you have full control of the rudder away from the wheel for maneuvering, coming alongside other vessels or docking.

With Sperry's MAGNETIC COMPASS PILOT you'll get straight steering that follows the shortest course in any sea conditions, calm or rough. Our Marine Department will be glad to give you additional information. When making your inquiry, please advise us as to power supply and other pertinent information regarding your boat.

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REGIONS

New Jersey's Semicircle of Science

About 10% of nation's research lies in small area near New York, covers everything from electronics to food.

There's a semicircular area of central New Jersey where research laboratories turn up like local stops on a commuter train. The semicircle begins at Edgewater on the North, touches Princeton on the West, and ends below Long Branch at the South (map). In it lie more than 400 facilities where some kind of research and development is under way. In this concentrated center, more than 10% of the nation's research thrives. At the very least, the outlay exceeds \$150-million annually.

• **Proximity**—There are two main reasons for this gigantic concentration of research in so small an area: (1) New Jersey is close to home offices in New York City; and (2) it is near a wide variety of industrial plants which can put new findings into operation under the close scrutiny of the men who developed them.

Moreover, the scientists have developed their research laboratories right in the backyards of other research laboratories. This means that they have the advantage of a continual interplay of ideas and help among themselves and other scientific workers. Sometimes they have put their headquarters near universities to gain the advantages of the abstract thinking going on there.

• **Bell to Summit**—The town of Summit is a typical example. In 1941, Bell Telephone Laboratories was looking for a place convenient to New York yet which would be in a quiet, attractive community with good living facilities for its staff. It found its Shangri-la on Murray Hill, just outside of Summit. Bell built a unique group of laboratory buildings. Ever since, it has gradually been filling them with thousands of physicists, chemists, engineers, biologists, and others. Henceforth Murray Hill will be headquarters for Bell's vast program of research in the area of telephone communication.

Then other companies looking for retreats moved to Summit. They had the same reasons as Bell—plus one more. Now their own research could profit from the presence of Bell's thousands of laboratory personnel. Air Reduction Co. built a modern lab across the road from Bell. Celanese Corp. took over



a school building a few miles away. Ciba Pharmaceutical Products, Inc., was already established. And other small laboratories gradually moved into the town, drawn toward the growing research community. In Princeton, Clifton, New Brunswick, Harrison, Kearny,

Bayonne, and other places much the same thing happened.

I. Background for Research

New Jersey has always been a natural for research. Thomas A. Edison's lab-



...that wearing out an old machine is expensive

Of course, you know that an obsolete machine, even with its low carrying charges, usually costs more to run than a new one. Your treasurer probably knows that, too; but it won't hurt to remind him that the best time to replace old machines is before they are completely amortized on the books. For, an automatic five years old is dangerously below today's Acme-Gridley production standards.

If you have seen new Acme-Gridley Automatics in action, you know that doubled production is not uncommon. Maybe we could help you prove this point for your treasurer—by placing in your hands more case histories of the actual experiences of some of our customers—down-to-earth records of dollars saved with new Acme-Gridley Automatics. Here's a typical example:

CUT THIS OUT FOR USE WHEN YOUR TREASURER WANTS PROOF

AN ACME-GRIDLEY CERTIFIED CASE STUDY

THIS IS WHAT HAPPENED

MACHINE—2" RB-6 Spindle Acme-Gridley Automatic

PART TURNED—Steel Eccentric Bushing

MACHINING TIME—17½ seconds—for 15 operations

FORMER METHOD—Blank out on automatic, then, on second machine, finish eccentric shoulders, internal recess and gouge O.D.

PRODUCTION INCREASE—300%

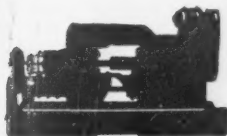
AND HERE'S ONE IMPORTANT REASON

THE ACME-GRIDLEY CROSS SLIDE is rigidly supported, low in the frame, without overhang, and has easily adjustable gibs on hardened steel ways. This design provides direct contact between the drum cam

and roll, and at the center of the slide. Positive cam control is insured and excessive linkage is avoided. Moreover, there are fewer parts to wear.

Generous open space around the slides gives more chip clearance, and more efficient operating convenience, through greater accessibility to tools—all

factors that insure accuracy, increased production and lower costs.

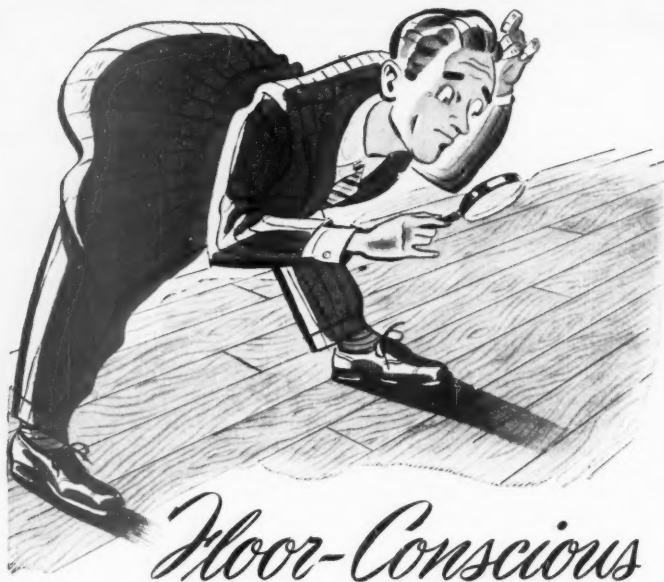


ACME-GRIDLEY BAR and CHUCKING AUTOMATICS built in 4, 6 and 8 spindle styles, maintain accuracy at the highest spindle speeds and fastest feeds modern cutting tools can withstand.

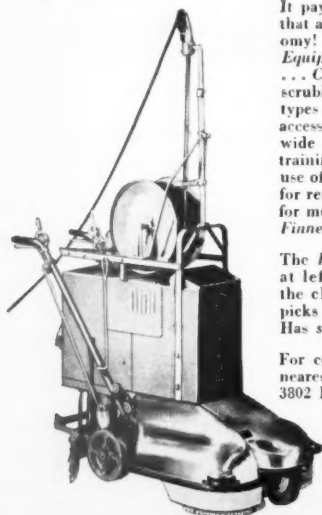
THE NATIONAL ACME COMPANY

170 EAST 121ST STREET - CLEVELAND 5, OHIO

WHY YOU SHOULD BE . . .



Management should be *floor-conscious* to prevent *floor-neglect*. The results of neglected floors can be costly. Adequate floor care not only protects management's investment in the flooring itself but, more important, aids safety underfoot . . . reduces fire hazards . . . bolsters worker morale . . . aids production. It pays to be *floor-conscious*.



It pays, also, to choose a system of floor care that affords an *over-all* floor-maintenance economy! Finnell offers such a system, including Equipment that exactly fits the individual need . . . *Cleaners* specially made for machine-scrubbing . . . *Scalers and Waxes* in specific types . . . *Steel-Wool Pads*, *Mop Trucks*, and other accessory equipment. And through its nationwide staff of *Specialists*, Finnell provides for training maintenance operators in the proper use of Finnell Equipment and Supplies . . . and for recommending cleaning schedules, et cetera, for most effectual care. These *Specialists* share Finnell's four decades of experience.

The Finnell Self-Propelled Scrubber-Vacuum at left, for use on large-area floors, applies the cleanser, scrubs, rinses if required, and picks up. Cleans up to 8,750 sq. ft. per hour! Has silent vacuum.

For consultation or literature, phone or write nearest Finnell Branch or Finnell System, Inc., 3802 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.



FINNELL SYSTEM, INC.

Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES
IN ALL
PRINCIPAL
CITIES

oratory was at Newark. Nearby, at Menlo Park, he produced the first electric light, the phonograph, the generator. Later, at West Orange, he began work which led to the birth of the motion-picture industry.

S. B. Morse carried out much of the development of his telegraph at Morristown. The du Ponts first produced smokeless powder commercially at Carney's Point, later developed low-freezing dynamite at another New Jersey center.

• **\$1.1-Billion**—A total of \$1.1-billion a year is now being spent on research in the U. S. This divides almost equally between government and private spending. In New Jersey, the split is roughly the same. Most of the government money goes into a vast research and development program in electronics at Fort Monmouth, near Long Branch. Here are the research headquarters of the Army Signal Corps, called the Signal Corps Engineering Laboratories.

The accent at Fort Monmouth is on developing specialized signal equipment for the Army. These include the radar, detection, guided missile, and television programs.

• **Offshoot**—Nearby is an offshoot of wartime experience at Fort Monmouth—a private research and development called Electronic Associates, Inc. The men who formed the company were young officers attached to the Signal Corps' new-equipment introductory detachment. After the war, they decided to keep the team intact as a research group. They set up shop at Long Branch because it is near both the Fort Monmouth center of military engineering and such centers of scientific thinking as Princeton.

Housed in a few sheds at Long Branch, Electronic Associates is working on new automatic computers and recorders for tracking objects in space.

II. The Universities

Princeton itself is the core of a wide variety of research. At the university, more than \$1.2 million will go into basic research this year. If this research succeeds, it will go a long way toward solving urgent problems in such diversified fields as cancer and supersonic speeds. In engineering and science alone, the university has a total of 57 different projects on the fire.

In addition, the university is doing research on industrial relations, population, municipal government, and international finance. And it recently got a grant of \$300,000 from the Guggenheim Foundation for research into peacetime uses for jet propulsion.

• **Study Institute**—Fanning out from the university is the Institute for Advanced Study, which boasts such minds as Einstein, Von Neumann, and Oppen-



IN EVERY INDUSTRY

**Machines are producing more work at lower cost
... with Adjustable Speeds from A-c. Circuits**

Thousands and thousands of installations ago, a new system for transmitting power to machines by electricity was introduced without fanfare. Today, after ten years, this Reliance V★S Drive has the respect of management in countless plants in every industry. *It is one of the surest ways to increase production and lower operating costs!*

Reliance V★S, the original *Packaged, All-electric, Adjustable-speed Drive*, will operate direct from your plant's A-c. circuit. Controlled manually or automatically—at the machine

or from any remote location—it will provide whatever flexibility is needed to secure maximum output at minimum cost. Quick, smooth starting and stopping and stepless speed changing over an infinite range are basic functions. Maintenance of proper tension on rolled materials, reversal at any point and other special functions can be added as desired.

For further information, write today for Bulletin 311. Or, a phone call to the nearest Reliance office will bring a Reliance application engineer to show you where and how you can use V★S most profitably.



*Sales Representatives in
Principal Cities*

Conveniently-packaged, factory-wired V★S Drives are available from 1 to 200 hp. Two or more motors may be operated simultaneously from a single Control Unit.

RELIANCE ELECTRIC AND ENGINEERING CO.

"Motor-Drive is More Than Power"

• 1069 Ivanhoe Road, Cleveland 10, Ohio

Why did Manufacturers and
Wholesalers use our
Commercial Financing Plan
in 1948 to a total of \$214,388,300?

Because it gave them
MORE OPERATING CASH
Quickly... Continuously... at Low Cost

LAST YEAR businessmen from coast-to-coast solved their needs for *more operating cash* with our Commercial Financing Plan. Money used ranged from a few thousand to millions.

THIS YEAR your business may need *more cash*... and find it difficult to get adequate commitments... in a tightening money market. That's why you should investigate our Commercial Financing Plan *now*.

The benefits of our plan are many, the cost surprisingly reasonable, because you pay interest on a *day-to-day basis*... only for money in actual use... not on a loan for a fixed amount over a fixed period of time. You do *not* pay interest on money that lies idle on deposit... money being accumulated to pay off maturing loans... money borrowed ahead for anticipated needs.

Our book gives you the complete facts—backs them up with graphs, charts, testimonials and case histories. For your copy just phone or write the nearest Commercial Credit Corporation office listed below.

Our timely new book, "How to Have an Adequate and Continuing Source of Operating Cash," tells how you may get *double or triple* the cash available from usual borrowing sources... how our *continuing* arrangement lets you do long-range planning unencumbered by renewals, calls and periodic cleanups of loans.

New...
Timely...
Send for it!



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300 cities of the United States and Canada.



heimer. (Contrary to common belief, the institute has no connection with the university.) It was this kind of environment which drew RCA Laboratories Division into Princeton's community. For as an RCA official puts it: "Our engineers and scientists like to live in Princeton, where they meet as neighbors stimulating persons who are leaders in research in other fields."

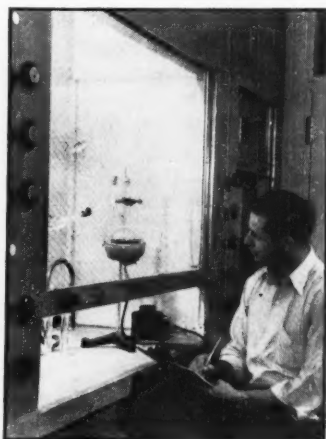
Princeton has attracted other groups for similar reasons. Organizations like the Institute of Public Opinion (Gallup Poll), Audience Research Inc., the Princeton Film Center, and the Textile Research Foundation spot the town. These groups figure that they are lucky to be so handy to the university.

• **Stevens and Rutgers—Stevens** Institute at Hoboken, and Rutgers (the state university) at New Brunswick have had similar effect. The state agricultural experiment station at Rutgers has been the force behind at least one project of world significance. It was there that Dr. Selman Waksman discovered the antibiotic, streptomycin. Rutgers then farmed out the discovery to nearby pharmaceutical laboratories for development. Both E. R. Squibb & Sons and Merck & Co. have invested heavily in perfecting and marketing Dr. Waksman's discovery.

This collaboration between academic and industrial worlds shows up frequently.

III. The Scientific State

There's hardly anything in everyday living which has not been improved by New Jersey research. Just a few of the products perfected in the state are electric lights, vitamins, radio, television, typewriters, telephones, telegraph, motion pictures, electrical gadgets, bet-



CHEMISTRY is the real backbone of most research in New Jersey



**If you have a stake in stationary power
you should know about these Cooper-Bessemer developments**

DURING the past four years, Cooper-Bessemer has introduced three engine developments of major importance to all users and producers of heavy-duty stationary power . . .

The Gas-Diesel Engine . . . Offers the big advantage of using low-cost gas fuel *at full diesel efficiency!* Also, ability to operate on almost any combination of gas and oil or 100% oil fuel makes these engines ideal *wherever gas supply is subject to variation or interruption.* Moreover, a recent refinement gives Cooper-Bessemer gas-diesels record-breaking fuel economy even at *fractional loads.*

Supercharged Gas-Diesel Engine . . . Affords still greater fuel economy and up to 50% more power output for a given engine size or displacement. Power needs may be met with fewer or smaller engines, requiring less initial investment and affording huge savings in the cost of installation, housing, maintenance and operation.

Turboflow Engine . . . A new principle of operation for gas engines, now applied to both 2-cycle and 4-cycle Cooper-Bessemers. Compared with ordinary gas engines, there is as much as 20% saving in fuel and up to 15% greater power output.

Detailed information on any of these major developments is available to you on request. If you want to know how you can cut your power costs year in, year out, find out about these and the other *new* things being done by one of America's *oldest* engine builders.





Increase Sales In a Buyers' Market

Most of us are glad to see the sellers' market give way to a more normal and healthy buyers' market. It means that quality, price and merchandising are again determining sales volume. And Dow Corning Silicones will help you maintain your position in a buyers' market because they help to improve quality and reduce costs in almost every field of industry.



PHOTO COURTESY STRATHMORE PAPER COMPANY

DC Antifoam A contributes to quality by killing foam in the gelatin glue sizing applied to high grade bond papers.

The Strathmore Paper Company of West Springfield, Mass., is typical of the many quality-conscious manufacturers who make profitable use of Dow Corning Silicone Products. In this case, the product is DC Antifoam A.

At the sizing machine, paper is run through tubs of glue sizing and the excess is squeezed off the paper between a metal and a rubber roll. Bubbling or foaming at the nip of the rolls may cause specks or dry spots on the paper. And excessive foaming of the pulp stock in the beater builds up to cause imperfections as the sheet is formed or as the paper is watermarked.

Strathmore chemists found that a solvent dispersion of DC Antifoam A in a concentration of less than 100 parts per million prevents the formation of foam; permits a smooth and even application of sizing and minimizes defects in sheet formation and watermarking.

The paper industry is only one of the many process industries in which DC Antifoam A saves time and money or improves quality. And DC Antifoam A is only one of the many Dow Corning Silicone Products that help to protect your position in a buyers' market. Call our nearest branch office or write for our new pamphlet No. B5-G2 describing DC Antifoam A.

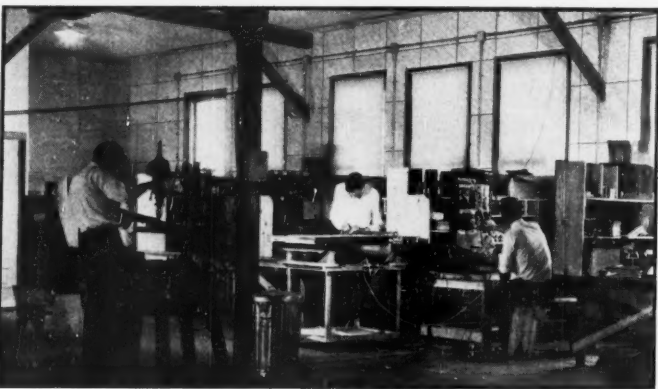
DOW CORNING CORPORATION MIDLAND, MICHIGAN

Atlanta • Chicago • Cleveland • Dallas
Los Angeles • New York

In Canada: Fiberglas Canada, Ltd., Toronto
In England: Albright and Wilson, Ltd., London



MODERN, AIRY LABORATORIES like this Esso layout in Bayonne, N. J. and . . .



CRUDE SHEDS like this being used by Electronic Associates are cores of research

ter flavors for foods, drugs, patent leather, high-octane gasoline, better lubricating oils.

In fact, one enthusiastic booster has suggested that if New Jersey were looking for a nickname to supplant "Garden State," he would suggest "Scientific State."

• **Chemicals**—One of the main reasons that New Jersey has such a large segment of the country's research is this: Of all the states, it contains the biggest single percentage of the chemical industry. By their nature, chemicals involve continual research to devise new applications and uses. So where that industry flourishes, a research program must accompany it.

Almost all the great names in chemicals are to be found in the New Jersey directory. Among them: du Pont (with 14 labs in the state); Celanese; Allied Chemical & Dye Co.; J. T. Baker Chemical Co.; Merck; Calco Chemical Division of American Cyanamid Co.

• **Design**—In recent years, there has been a new trend in laboratory design. Bell has made wide use of the movable wall, which permits the sealing off of laboratory cells in six-foot multiples. Each unit is equipped with pipes that supply various gases, steam pressures,

and water pressures. Technicians can use these as they are needed. Thus there can be one laboratory several hundred feet in length with one set of service and facilities pipes. Or there can be many small labs, each with all the facilities needed for effective research.

Bell's theory was to create a building which would be completely flexible and would provide services into every square inch of the laboratory area. Architects met the specifications by designing the structure around the facilities.

• **Space and Light**—Many other firms have since done the same thing with their new research centers in the state. The Johns-Manville Research Center at Manville and the Esso Research Center at Linden both derive from the Bell formula.

Most of these new structures stress space and light. They make wide use of glass, have high ceilings. They have modern, airy restaurants and solariums for employees' relaxation; the atmosphere is more like that of the campus than of the factory.

IV. Methods and Goals

In the natural sciences, courses through the uncharted seas of research

Easy on the Mind



NO EXPERIENCE NECESSARY. After brief instruction, anyone in your office can operate the new Marchant Figuremaster efficiently. It has fewer controls... instant, positive division line-up... flexible universal tabulator... automatic point-off in division, either as a decimal or percent-

age. Simultaneous automatic multiplication is made easier and faster with specially designed key-tops which guard against manual error and aid touch-system operation... all adding up to more CPO.* These and 14 other principal new features, combined with Marchant's traditional accuracy control, simplicity and silent-speed, establish the Figuremaster as the world's foremost calculator.

*Calculations Per Operator

FIGURE FASTER WITH A

MARCHANT



Figuremaster

AMERICA'S FIRST CALCULATOR

Find out how the new Marchant Figuremaster can get out your figures faster and cheaper. Call the Marchant Man in your phone book today



or just mail this coupon to Marchant Calculating Machine Company, Oakland 8, California

MARCHANT CALCULATING MACHINE COMPANY
Oakland 8, California

Without obligation, I would like to see the Figuremaster ☐

Please send me free information about the Figuremaster ☐

B-2

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Address.....

City..... State.....

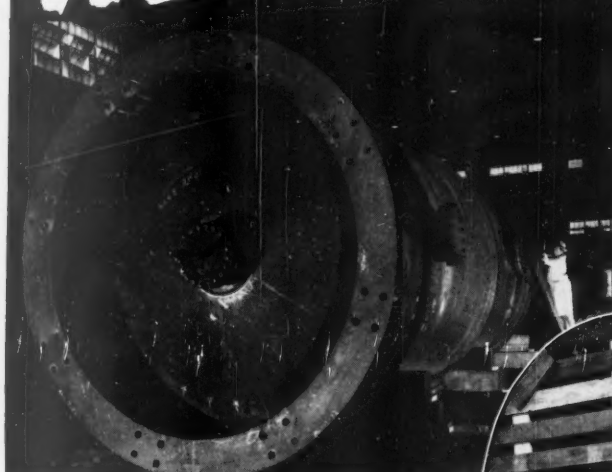
VESSEL DIVISION

NEWS



A. O. SMITH
Corporation

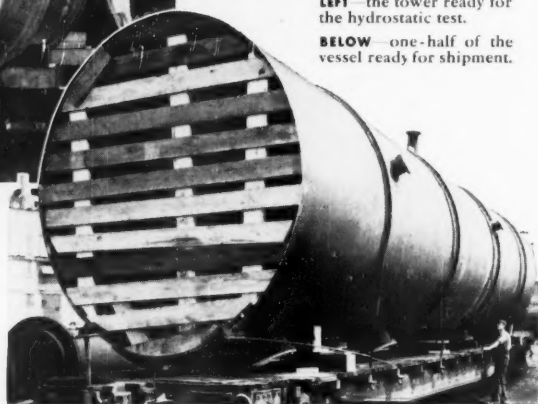
New York 12 • Philadelphia 5 • Pittsburgh 19 • Atlanta 3 • Chicago 4
Tulsa 3 • Houston 2 • Seattle 1 • Los Angeles 14
International Division: Milwaukee 1



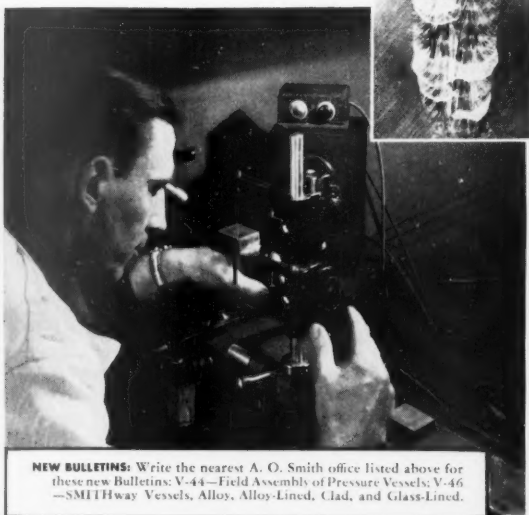
A. O. SMITH TAKES THE GUESS WORK OUT OF FIELD ASSEMBLY. Railroad shipping restrictions made it necessary to field-assemble this 11½ ft. dia. x 116 ft. long SMITHlined Fractionating Tower. To insure ease of assembly in the field, it was first manufactured and completely assembled in the A. O. Smith Milwaukee Plant, then hydrostatically tested, cut in two at the center girth seam, rescarfed for welding in the field, and shipped. Field-assembly costs were cut to a minimum with only one girth seam to be welded.

LEFT—the tower ready for the hydrostatic test.

BELOW—one-half of the vessel ready for shipment.



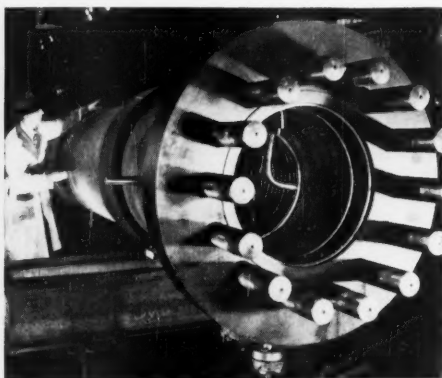
MANY TESTS BEYOND CODE REQUIREMENTS are a regular part of A. O. Smith vessel production control procedures. Here Bill Poehlman, a 20-year veteran, in charge of spectroscopy and X-Ray research, checks the deposited weld metal composition in a vessel test plate, by means of an A. O. Smith-developed microspectrographic technique.



NEW BULLETINS: Write the nearest A. O. Smith office listed above for these new Bulletins: V-44—Field Assembly of Pressure Vessels; V-46—SMITHway Vessels, Alloy, Alloy-Lined, Clad, and Glass-Lined.



IN STOCKHOLM, SWEDEN, they know about the famous SMITHway welded Multi-Layer vessel construction. Here is one of two SMITHway Inconel-lined Multi-Layer Autoclaves for fatty acid service, with a shell thickness of 5 inches and an operating pressure of over 5,000 psi. This vessel was shipped direct by ocean-going ship from Milwaukee to Stockholm.



aren't always easy to plot. You start on one problem and come up with an answer to something entirely different. Some laboratories devote much of their time to basic research without any particular project in mind, while others go after specific findings.

These divergent approaches have led to rival methods in organizing a research program in relation to the rest of industrial activity (BW—Dec. 11 '48, p. 23). But the goal, regardless of the methods followed, is the same: to get new and better products at lower costs.

Sometimes the results carry far afield. From research in petroleum by Esso scientists have come plastic, resins, and rubber-like materials. Weed-killing chemicals and insecticides are also products of chemical research into new uses for petroleum.

• **Contributions**—Probably the laboratories in New Jersey contributing most immediately to the well-being of man's body are those working in pharmaceuticals. Of Merck's best known contributions, Vitamin B₁, Vitamin B₆, and Vitamin B₁₂ stand out.

Johnson & Johnson, known for its aids to surgeons, has developed a new starch for powdering surgeons' gloves. This product, Biosorb, is absorbed by the tissues and knocks out the chance of adhesions.

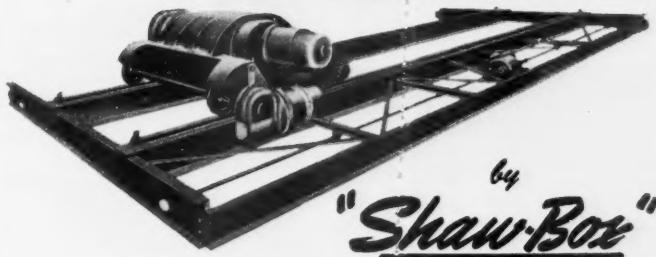
• **Housing**—Contributing to man's comfort in other ways is the John B. Pierce Foundation at Somerville. This private research group works on improved housing, sanitation, heating, and ventilation. The company, which has been experimenting with prefabricated housing, designed the first 30,000 housing units at Oak Ridge, Tenn.

And for man's entertainment during hours of relaxation, Dumont, RCA, Bell, Federal Telecommunications Laboratories, and others are deep in the job of trying to improve radio and television. They are all working to perfect cathode-ray tubes, micro-waves, coaxial cables, and sending and receiving equipment.

General Foods Corp., in its large central laboratories in Hoboken, is continually experimenting with new processes in the nutrition field.

• **Outside the Semicircle**—While most of New Jersey's research activity is limited to within the semicircle, a lot of important work is going on outside it. Socony-Vacuum Oil Co. runs a large laboratory at Paulsboro, south of Camden. Nearby, du Pont has some of its most important research in progress along the banks of the Delaware River. A fine-comb search would probably show laboratories in every hamlet with an industrial plant. For in a state so highly industrialized as New Jersey scientific research is a must in leading the way to keener competition and better products.

New! 'Load Lifter' Crane



The advantages of a standard electric traveling crane at hoist-type crane price

For the many industrial lifting jobs in the range between the so-called hoist-type crane and a heavy duty "Shaw-Box" electric traveling crane, the 'Load Lifter' electric traveling crane provides a low-priced efficient installation of utmost economy.

It is built for floor or cage control and embodies many of the engineering and construction features that have given "Shaw-Box" Cranes their reputation for astonishing endurance.

'Load Lifter' Cranes require little overhead space, give exceptionally high hook lifts and close hook approaches to the sides and ends of the runway. Built into them are the advantages of strength, stamina, safety, convenience and low cost for operation and maintenance. You can acquire all these results at a cost comparable with that of hoist-type cranes.

Send for Bulletin No. 380 containing complete information about this new, low-cost crane.



SHAW-BOX Cranes

MANNING, MAXWELL & MOORE, INC. • MUSKEGON, MICHIGAN

Builders of 'Shaw-Box' Cranes, 'Budget' and 'Load Lifter' Hoists and other lifting specialties. Makers of Ashcroft Gauges, Hancock Valves, Consolidated Safety and Relief Valves and 'American' Industrial Instruments.



From Tool Sharpening



**To HEAVY SNAGGING
SIMONDS**
makes the 'grade'
GRINDING WHEELS



For every grinding job, from sharpening cutting tools to grinding giant castings there's a Simonds Abrasive Wheel... right in grain and grade... right for economy... right for top results.

Besides complete range of wheel selection, Simonds Abrasive offers you quick availability through distributors in all principal industrial centers.

Write for Grinding Wheel Data Book
Also lists distributors.

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Grinding Wheels
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SIMONDS ABRASIVE COMPANY
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SIMONDS Other Divisions **SIMONDS**

Industrial M. F. Special Steels
Simonds Products for Canada



SPECIAL TRAIN puts a big show on wheels for local communities and draws...



BIG CROWDS anxious to see movie stars and politicians. It's all a part of the way...

Pennsylvania Sells Itself

Drive to lure new industries into state features circus atmosphere, with accent on glamor, to teach communities their virtues. Huge committee enlists participation of citizenry.

A 20th Century War Between the States has flared to white heat over the past few years. By contrast to the 19th century war, this one is bloodless. But to most of the states involved, economic survival is just as much at stake, for this is a struggle among various states to lure in companies which are thinking of relocating plants and offices (BW-Jan. 29 '49, p31).

• **Fear of Collapse**—This civil war grew out of another war—World War II. The U. S. economy in 1946 was dominated

by a fear of postwar industrial collapse. It was to forestall such a catastrophe that states began to try to attract new business, and urge those already there to expand.

Most states leave the strategy for this battle in the hands of their commerce departments. These put on widespread advertising campaigns, both in publications and by direct mail. Through their field men, they make personal contact with companies which are planning to relocate, and try to sell them on their



HILTON HOTEL
EL PASO, TEXAS



HILTON HOTEL
LUBBOCK, TEXAS



THE DAYTON BILTMORE
DAYTON, OHIO



HILTON HOTEL
ALBUQUERQUE, N. M.



THE TOWN HOUSE
LOS ANGELES



PALMER HOUSE
CHICAGO



THE ROOSEVELT
NEW YORK



THE MAYFLOWER
WASHINGTON, D. C.



**IMMEDIATE REPLY
ON RESERVATIONS AT ANY
HILTON HOTEL**

The new Hilton Inter-Hotel Reservation System offers instant information on accommodations at any Hilton Hotel up to two months in advance. This Hilton Service takes only a minute and is without charge. Consult the Assistant Manager at any Hilton Hotel for this new service. Or, if you prefer, teletype the hotel.



THE STEVENS
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THE PLAZA
NEW YORK

Reservations also accepted for the Bermudiana and Hotel St. George in Bermuda



C. N. HILTON, PRESIDENT

EXECUTIVE OFFICE • THE STEVENS • CHICAGO 5, ILLINOIS



MOSINEE

"More than Paper"

MOSINEE means many things to many people . . . and in many industries . . . from refrigerator doors to batteries and telephone receiver parts . . . from countless plastic products parts to electronic units and electrical goods parts to nationally famous MOSINEE Towels . . . all typical of dependable MOSINEE scientifically controlled quality and uniformity.

MOSINEE PAPER MILLS COMPANY, Dept. W, MOSINEE, WIS.
"Essential Paper Manufacturers"



"AMBASSADOR" James Stewart gets scroll—and instructions to sell his state

state. They prod communities into learning what they have to offer a new industry, what kind of industry they want, and how to get it into town.

• **Pennsylvania Week**—The state of Pennsylvania does all these things. In an effort to educate communities on how to boost themselves, it goes even further than most of its rivals. Every fall, the state's Dept. of Commerce puts on a Pennsylvania Week. This week the department already had 85% of its plans for this year complete.

For this event, the department puts all the promotional razzle-dazzle it can find against a backdrop of everything from movie stars to politicians. Last year, for the first time, it put this galaxy on a special nine-car Pennsylvania R. R. train. This train, carrying made-in-Pennsylvania products, stopped at 14 communities. The people aboard it gave the citizenry a "tightly wrapped educational but entertaining program."

• **Progress**—Pennsylvania Week had none of this glamor when it was started in 1946. The idea came into being so late in the year that it amounted chiefly to an extensive newspaper advertising campaign.

Things picked up the next year; retailers, some utility companies, and a few manufacturers held open houses. One or two communities staged industrial exhibitions; Standard Oil Co. of Pennsylvania paid for and sponsored a half-hour color movie called "Pennsylvania."

• **Impact**—But it was in 1948 that the campaign first made a real impact. And the reason behind that impact was participation of the public. More than 10,000 Pennsylvanians took an active part in some phase of last fall's program. They were pulled into the act largely through the efforts of an enormous

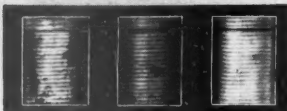
REVOLUTIONARY New Method of Rust Control

Outperforms other more complex, more costly "preventives".
Answers problems never before solved. CLEAN, SIMPLE TO USE!

Eliminates Slushing in Oil—It's . . .

Angier VPI® Wrap
 *Vapor Phase Inhibitor developed by SHELL

PROOF: Identical steel parts exposed 9 months to industrial-marine atmosphere. These photos are unretouched.



ANGIER craped, waterproofed, reinforced papers for industrial, building and farm use.

MORE than a non-corrosive paper — a revolutionary packaging method of **COMPLETE** rust control. Get the facts now!

Angier CORPORATION
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Industrial Packaging Engineers Since 1895

Gentlemen: Please send **FREE** 12 page booklet, "Complete Rust Control with Angier VPI Wrap".

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Address _____

City & State _____

ONLY UNITED offers daylight and overnight service between the East and "all the West." Only United links the East with the Midwest, all the Pacific Coast, and Hawaii.

LOW FARES. United's fares have gone up only 4% since 1939. The cost is surprisingly low, for your ticket includes meals, and there are no tips or expenses aloft. Save 5% more by buying round trips. And above all, save time. For reservations, call United or an Authorized Travel Agent.



The Main Line Airway

- Coast-to-coast, border-to-border on the Pacific Coast and west to Honolulu.

PASSENGERS • MAIL • EXPRESS
FREIGHT • AIR PARCEL POST



Buffalo-Springfield's Model KX-25—Twin Disc equipped

Twin Disc Keeps Them Rolling

In February, 1929, The Buffalo-Springfield Roller Company introduced Model VT-21, a seven-ton tandem road roller. *This roller was equipped with Twin Disc Clutches.*

In February, 1949, Buffalo-Springfield is building Model KX-25, a 12-18 ton, three-axle tandem roller. *This roller also is equipped with Twin Disc Clutches.*

For more than 30 years, leading manufacturers of equipment for every industry have found Twin Disc Clutches and Hydraulic Drives the answer to power transmission problems. TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division, Rockford, Illinois).



JUDGE TWIN DISC BY THE COMPANIES IT KEEPS

"general committee" which the Dept. of Commerce set up.

In effect, this committee—now a permanent fixture—forms a network of promotional communication across the state. Its members are the cream of business and community people.

For example, its chairman is Pressly H. McCane, president of Duquesne Light Co., Pittsburgh. Other members include men like Walter E. Black, vice-president of Standard Oil of Pennsylvania; David F. Austin, a vice-president of U. S. Steel Corp.; W. H. Doran, executive vice-president, Metropolitan Edison Co., Reading; Harley Swift, president and general manager, Harrisburg Street Railways; Ralph E. Weeks, president, International Correspondence Schools, Scranton; Bernard M. Kirsch, vice-president, Pennsylvania Electric Co., Bradford; and Arthur C. Kaufmann, executive head of Gimbel Bros. in Philadelphia.

• **Solid Results**—Last year this kind of setup produced solid results. More than 200 manufacturers and utilities held open houses, or "family days." The state's high school seniors vied with each other for \$2,500 in prizes in a quiz-essay contest. Industrial expositions popped up in communities all over the map.

Biggest innovation of all was the Dept. of Commerce idea to set up a "Pennsylvania Ambassadors" program. Under it, the home towns of people who have found fame and fortune elsewhere in the country nominate them for a special award. This award is a "Pennsylvania Ambassador Certificate."

The goal here is to get the recipients to act as ambassadors for the state in other sections of the nation, so that industry and business will move to Pennsylvania. Last year 22 former Pennsylvanians got the certificates. They included Kaufman T. Keller, president of Chrysler Corp.; Thomas E. Millsop, president of Weirton Steel Co.; and James Stewart, movie actor (picture, page 42).

• **More to Come**—Pennsylvania will stage the same kind of special week next fall. It will have all of the things that 1948's had—plus a few more. For example, several communities are already planning to put on community-wide pageants, "dramatizing the great moments in the state's history." And entertainers who claim the state as their home are working up programs for use by the radio stations in the state. Pennsylvania's business leaders plan to take a bigger part than ever.

Is all the hullabaloo paying off? The Pennsylvania Dept. of Commerce is sure it is. It says that a survey shows that 1,086 of the state's 2,400 industries have put nearly \$2-billion into new and expanded plants in the state since the war.

When your product
needs a lift
Hitch on to this star!



DON'T think of Allegheny Ludlum as a steel producer in the ordinary sense. We don't make "ordinary" steels.

Our job is to create and develop materials in the special alloy field: stainless and heat-resistant steels, tool and die steels, carbide metals, special electrical and magnetic materials, and super-alloy steels for high temperature service. The function of these products is either to do existing jobs better than ordinary steels or other materials can do them; or to reach out into new fields and

do jobs that previously couldn't be done at all. In practically every case, the use of these special alloy steels proves not only to be economically sound, but actually cheapest in the long run.

Do you want to add something to present products: longer life, more wear, better looks, greater strength, less weight, finer performance? Let us help you do it. Do you have a new device, or re-design, still in the "good idea, but haven't found the right material" stage? Call us in—that's our job!

Complete technical and fabricating data—engineering help, too—yours for the asking.

W & D 2350

ALLEGHENY LUDLUM STEEL CORPORATION

The Nation's Leading Producer of Stainless Steel in All Forms



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Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses

PRODUCTION



DIESELS ON THE LINE: Cooper-Bessemer turns out about 50 engines a month in its Mt. Vernon plant. But secret of its . . .

Gas Diesel Still Stumps the Trade

Cooper-Bessemer isn't telling how its Turboflow gets extra power. Company now specializes in oil and gas industry market.

It's a tough job to keep the details of a product a secret from your competition. It's even tougher after the product goes on the market. But Cooper-Bessemer Corp., Mt. Vernon, Ohio, has managed to do just that—even though its brainchild is a huge 2,400-hp. diesel engine.

C.B.'s 2-cycle Turboflow engine was brought out about three years ago. A gas-burner, it's said to use 15% less fuel than conventional gas engines of equal horsepower. According to Ralph Boyer, C.B.'s chief engineer, it develops 10% more horsepower than other gas engines of the same size or displacement.

• **New Order**—Last week Cooper-Bessemer was busy on a new production run of the engines. The company had just landed 70% of a contract from Transcontinental Pipe Line Corp. for engines and compressors to help pump gas from Texas to New York. The company will deliver 10-cylinder Turboflow units, rated at 2,400 hp.

Exactly how the engine gets its extra "oomph" is still C.B.'s secret, although one competitor now seems to be close to the answer. Poker-faced company officials say its performance stems from unique developments in ignition, and improved combustion through better air-fuel mixtures and high compression.

• **Development**—Up to 1927, Cooper-Bessemer's main output was spark-ignited 4-cycle gas engines. But the sales department constantly needed the engineers to make a gas engine that worked on a diesel cycle. Engineers knew that the maximum allowable compression pressure for gas with spark ignition was about 125 lb. p.s.i. The ideal gas-air ratio was 10 parts of air to one part of natural gas. If you doubled the compression figure, and injected gas at the right point of the cycle, the engineers figured you could ignite the charge without spark.

But it didn't work out that way. Even with the compression raised to 400 p.s.i.,

they got only occasional hits. So the company was ready to throw in the towel.

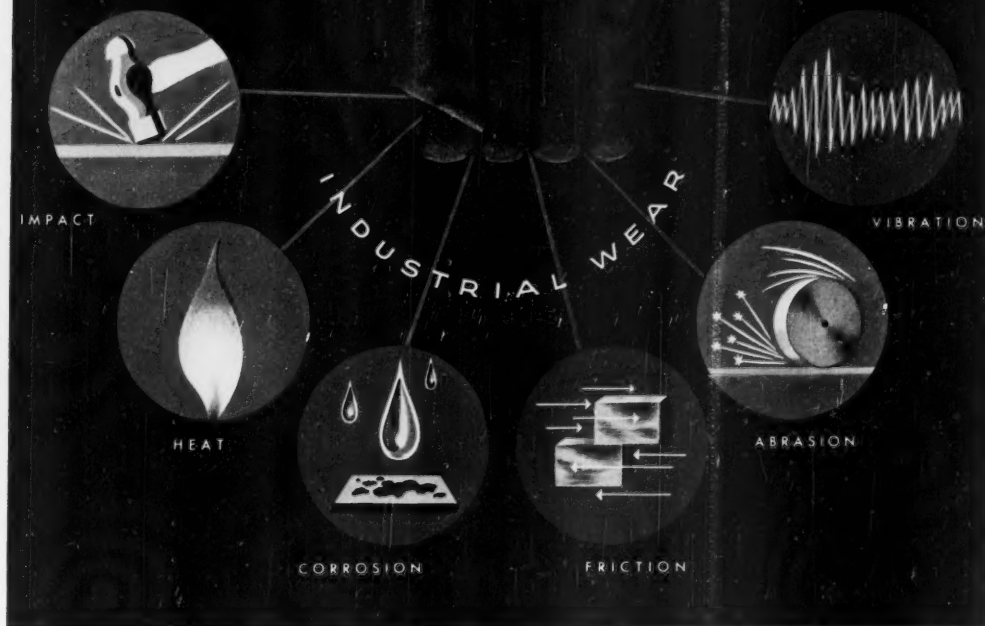
Boyer, though, thought the problem was worth one more try. This time he started the engine on fuel oil, then injected gas in very small amounts. As the engine kept running, he fed in more and more gas while he cut back the fuel oil. Finally, he had the engine purring along on gas alone.

The experiment proved one thing to Boyer. The gas-air mixture had to be on the lean side—something like 20 to 1 under full load.

• **Patent Block**—Certain, at last, that it had the answer, C.B. lit out for the patent office. But it found it was blocked by claims set up by Dr. Diesel in 1901. Though Diesel apparently had never used gas as fuel, he had mentioned in his application that gas possibly would work in the engine. Another prior claim had been filed by an Englishman, R. Jones, who had succeeded in using "town" gas for fuel in the diesel cycle.

• **Kinks and Complaints**—Big trouble with C.B.'s first commercial gas diesel

This is our business



...and it can mean good business for you

Somewhere in your products or machines are parts that must take severe wear and tear. We call these "punished parts." Our business is to make them last longer.

In our study of industrial wear, failure of these parts may be traced to one or more of six basic causes. Abrasion and friction are the most common forms of wear. Vibration and impact from continuous pounding also take heavy toll. Both heat and corrosion rapidly lead to deterioration and failure of equipment. All six are forms of industrial wear, all add up to what you

pay for maintenance and replacements, and for the time lost during shutdowns.

Brake Shoe now makes over 10,000 types and kinds of parts and products, the result of 46 years of specialized engineering and metallurgical research into the causes and control of industrial wear.

Among these Brake Shoe developments or in our research laboratories may be the solution to *your* wear problem. Your inquiry might very well turn our business into good business for you.

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COMPANY

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10 Divisions of American Brake Shoe Co. produce wear-resisting parts in 60 American and Canadian plants.

AMERICAN BRAKEBLOK DIVISION • AMERICAN FORGE DIVISION • AMERICAN MANGANESE STEEL DIVISION
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KELLOGG DIVISION • NATIONAL BEARING DIVISION • RAMAPO AJAX DIVISION • SOUTHERN WHEEL DIVISION

"—They perfect nature and are perfected by experience"—FRANCIS BACON



What these man-made gems mean to you

SYNTHETIC STAR SAPPHIRES like this one, which only the finest of nature's stones can equal, are now made by *man*.

Yes, Union Carbide—which since 1912 has made synthetic crystals for precision instruments and other industrial uses—today produces the loveliest of synthetic star sapphires and rubies for personal wear.

But far more important to all of us are the research and technical skills... the work with extremes of heat and cold, with vacuums and tremendous pressures... that lie behind these superb jewels. The research and skills that produce today's *better materials*... used by industry in turning out numberless products.

The same research that brings these man-made stars within our reach... brings us, too, man-made leather and rubber. It also gives us today's *better food*, clothing, and shelter. It helps us resist disease. It improves our heating

and lighting. It's a part of our swifter, safer transportation systems... our communications... our progress in construction.

The people of Union Carbide work with a vast range of Alloys, Chemicals, Carbons, Gases, and Plastics. They are constantly perfecting new processes... and producing hundreds of materials... for the use of science and industry to benefit mankind.

FREE: You are invited to send for the new illustrated booklet, "Products and Processes," which shows how science and industry use UCC's Alloys, Chemicals, Carbons, Gases and Plastics.



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30 EAST 42ND STREET  NEW YORK 17, N. Y.

Trade-marked Products of Divisions and Units include

LINDE Oxygen • PREST-O-LITE Acetylene • PYROFAX Gas • BAKELITE, KRENE, VINYLON, and VINYLITE Plastics
NATIONAL Carbons • EVEREADY Flashlights and Batteries • ACHESON Electrodes
PRESTONE and TREK Anti-Freezes • SYNTHETIC ORGANIC CHEMICALS • ELECTROMET Alloys and Metals • HAYNES STellite Alloys

was that it burned too much fuel when the engine ran under light loads. But steady tinkering by the engineers worked out that kink. By 1945, the gas diesel engine was a completely practical job.

Still, there were some that weren't satisfied. The gas industry, for one, wanted an engine that could operate without pilot oil fuel. Pumping stations in remote spots often had a tough time getting fuel oil supplies.

Cooper-Bessemer's answer to that was the 2-cycle Turboflow—a diesel that burned gas alone. It made its bow in 1947, was followed by a 4-cycle model. The latest entry is a supercharged Turboflow that has just been put through its research paces.

• **History**—The company got its start in 1833 as a foundry. Formed by two brothers, it was called the C. & G. Cooper Co.

By 1853 it was producing the first steam locomotives built west of the Alleghenies. In 1875 the company built the first steam farm tractor; it took a team of horses hitched to the front axle to guide the contraption. Engine production was in full swing by 1886. The long list of products the company has made in the past has built up a major pattern-storage problem: C-B. still has to furnish parts for products long discontinued from its catalogue and all but forgotten.

During the early 1900's the company ran into stiffening competition from the Bessemer Gas Engine Co. which had originally been organized to manufacture an inside friction clutch for the petroleum industry. In 1929 the two merged into the present Cooper-Bessemer Corp. The company runs both original plants, employing about 1,900 at Mt. Vernon, and more than 2,000 at Grove City, Ohio.

• **Integration**—Production, engineering, and supervision for the plants are completely integrated. Yet they are inde-

pendent units. Each has its own foundry, metallurgical laboratory, machining, heat treating, fabricating, processing, and assembly departments. Between the two plants, the company has built more than 3.5-million hp. in gas engines and about 120,000 hp. of gas diesels.

• **Market**—The growing gas and oil industries provide C-B. with much of its future market, the company figures. It is keeping a watchful eye, also, on gasification of coal. It sees a big business potential in the process if and when it is perfected.

Under the prodding of H. Gehres, executive vice-president and director of engineering, C-B. has brought out a radically new pipeline pump. Sold for the oil fields in a package with the company's engines the pump has eight to ten cylinders, operates with a 4-in. stroke at about 400 r.p.m. That compares to the usual 60-in. stroke at 30 to 40 r.p.m. Geared directly to the engine, the pump is cheaper, saves on installation cost, and will operate in a smaller space than most such pumps require.

A somewhat related market for C-B. engines is provided by municipal sewage treatment plants. The sewage gas these produce can serve as fuel for gas engines, produce cheap byproduct power.

In general, Cooper-Bessemer finds that there's a trend toward substituting gas engines for oil engines wherever a convenient source of gas is available. If the gas supply is reliable, the spark-ignited gas engine is usually preferred. The gas diesel is the choice where gas is available only part of the time, because the gas diesels will run on either gas or fuel oil.

• **Cast Frames**—Unlike most engine builders, Cooper-Bessemer engineers specify and use cast frames for their engines. Their techniques involve exhaustive analyses of stresses on the frames. They figure they are making

for CANINES



Whether it's walking your dog or performing the heaviest industrial work, International can supply a superior Campbell chain for the job.

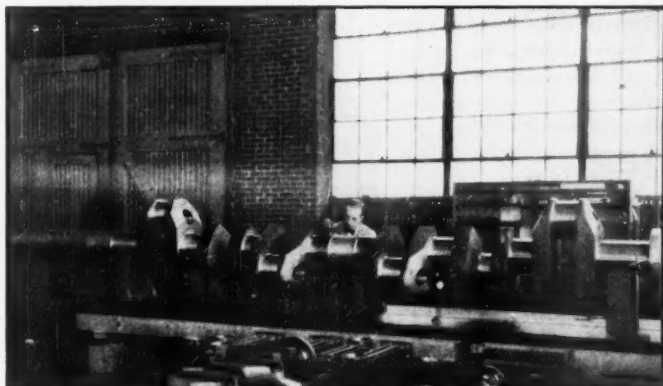
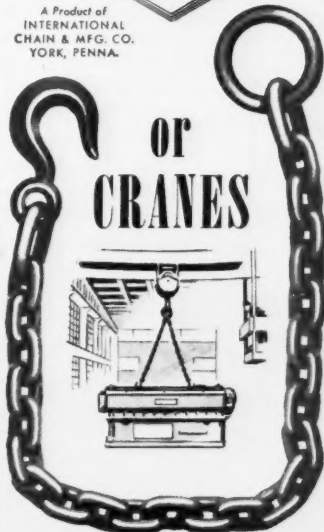
The Campbell line includes chain for every need; industrial, marine, farm and automotive.

And International's facilities are complete in every detail to build the chain to do your job.



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OR CRANES



HUGE CRANKSHAFTS are made from cast iron in Cooper-Bessemer's foundry. Here a diesel crankshaft gets final inspection after machining operations



ALWAYS UNIFORM...

TO PROTECT YOUR PROFITS

Every Hackney Seamless Cylinder is uniform in thickness and strength... a uniformity made possible by the Hackney Cold Drawing Process. Each cylinder is comparatively light in weight... yet rugged in construction. However, uniformity in Hackney Cylinders is not confined to physical characteristics alone. Look to performance records as well. There, you will see how Hackney Cylinders are alike in the utmost protection they provide your product... in their ability to deliver low transportation costs... in the long life each one provides. *For full details write us.*

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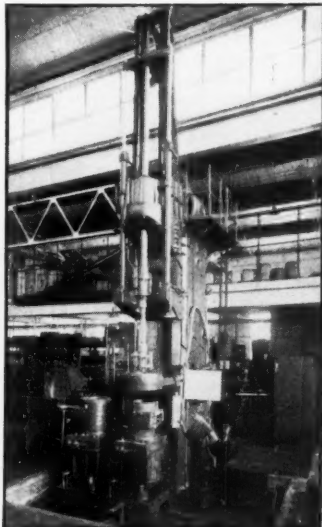
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS



CHIEF ENGINEER Ralph L. Boyer is also a Cooper-Bessemer vice-president

stronger and lighter bases from their cast alloy iron than they could get from welded steel bases.

Crank shafts are made of a special alloy iron. This is essentially a Meehanite iron produced under controlled conditions. Nickel and molybdenum are added and the casting is heat-treated to produce a high-strength metallurgical structure. Although cast iron is not so strong as steel, the cast structures are stronger because they are designed to cut out highly stressed areas.



SPECIAL MACHINE—This big honer was developed to precision finish long engine cylinders and liners

It raised hose strength 50%

Du Pont "Cordura" High Tenacity Rayon



**For high strength at low cost
... look into Cordura***

"One of the greatest developments in hose manufacture in many years!" That's what one of the world's largest makers of hose says about Du Pont "Cordura" High Tenacity Rayon.

Industrial hose can be made lighter, yet with far greater resistance to flexing and strain. Safety factors can be well-nigh doubled.

And "Cordura"-reinforced garden hose is so durable that a leading merchandiser backs it with a ten-year guarantee.

Manufacturing costs are reduced... quality improved... with Du Pont "Cordura" High Tenacity Rayon. While you might expect to pay a premium for "Cordura" advantages, it works the other way because you get so much strength from so little!

Can you use "Cordura" to improve an article you make? Write Du Pont for detailed information about "Cordura." And tell us your specific needs. Perhaps we can guide you to a profitable application.

Can you use a product improved with "Cordura"? Check with your supplier—or write Du Pont.

Rayon Division, E. I. du Pont de Nemours & Co. (Inc.),
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*REG. U. S. PAT. OFF.



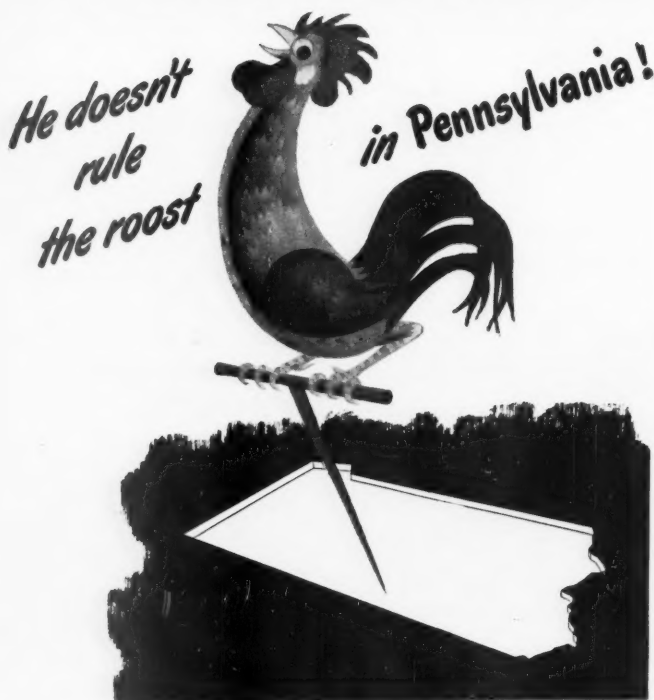
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BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

for RAYON... for NYLON...

for FIBERS to come... look to DU PONT

Stability comes of many products



Of course, he has plenty to crow about . . . eggs and poultry are big time in Pennsylvania. But so are cattle, hogs, milk, grain—Pennsylvania farmers have a year-round steady income.

STABILITY. These many products give Pennsylvania a stability unmatched by most upper-third farm states.

STABILITY. Pennsylvania has more markets for its products—995 as compared to other states' average of 349. Pennsylvania farmers spend less to sell their products, save more to buy yours.

STABILITY. Pennsylvania was a great farm state when most others weren't even explored!

And Pennsylvania is a great farm state today—great in products, in markets, in farm experience. Well-informed, too—7 out of 10 farm families are regular readers of PENNSYLVANIA FARMER.



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"your best profit hedge in the farm market"

No farm area of equal size and wealth can match the stability of The Golden Crescent. It has greater age . . . more market centers . . . a larger variety of products. Served by MICHIGAN FARMER, THE OHIO FARMER, and PENNSYLVANIA FARMER, The Golden Crescent safeguards your profits through the ups and downs of the farm market. For further information write 1013 N. Rockwell Ave., Cleveland 14, Ohio.



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PRODUCTION BRIEFS

Resistance of textiles to wear, water, shrinkage, and fire is described in a government report covering war and post-war studies. Write the Office of Technical Services, Dept. of Commerce, Washington 25, D. C.

A new slide rule, designed by G.M. engineers, computes the amounts and wave lengths of energy coming from hot objects.

New trends in illumination may be seen at the Third International Lighting Exposition at the Stevens Hotel in Chicago next week. There will be more than 100 exhibits.

Aviation oil tank that can withstand a direct flame of 2,000F has been developed by B. F. Goodrich for the Navy. It's made of synthetic rubber, will eventually be sold on the civilian market.

New beta-naphthol plant in Cincinnati will make Hilton-Davis Chemical one of the three major U.S. producers. It cost about \$1-million.

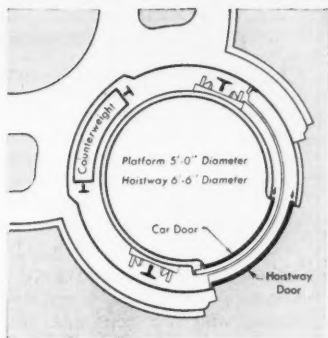
Jet aircraft's jolts and bumps can be studied in flight via a new G. E. instrument. It's able to measure up to 300 vibrations a second, convert them into electrical impulses, record them on a chart.

"Nailable" steel flooring for gondolas and boxcars is now being tested in service by the Chicago & Eastern Illinois. It has grooves into which nails can be driven. This cuts wooden-floor maintenance costs.

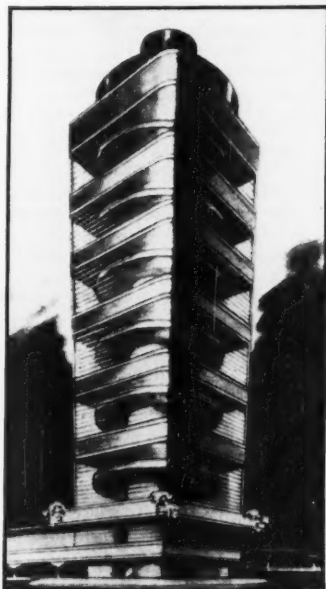
Titanium data will be available Apr. 1 from the Superintendent of Documents, Washington, D. C. It will be a report on the Navy-sponsored symposium held in December.

Pure molybdenum tube—probably the world's largest—was recently produced in Chicago by Fansteel Metallurgical. It was 45 in. long, 2 in. in diameter. Fansteel made it experimentally as an ingot from which to draw smaller tubes, is hoping others will think up additional uses.

Turbo-superchargers are aboard the first Boeing Stratocruiser delivered to Pan Am. That's the first time these war-developed units have been used commercially.



ROUND ELEVATOR connects . . .



"BRANCHES" of laboratory, built as a . . .

Man-Made Tree

New Johnson research center to have round and square floors to give greater efficiency, more light for workers.

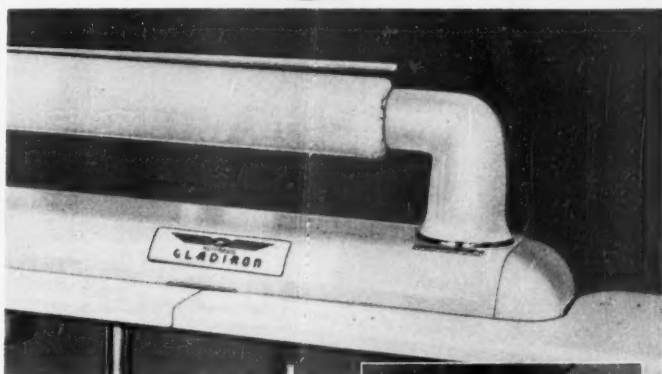
When S. C. Johnson & Sons, wax-makers, set out to build a new research laboratory, they wanted something different. The result: Their new building, designed by Frank Lloyd Wright and now being built at Racine, Wis., segregates research departments vertically, rather than stringing out the departments along a corridor.

• **Tree**—To do this, the building is designed like a tree. A circular masonry

ANOTHER



SERVICE STORY



The flawless finish on this Thor Gladiron* is obtained with belt grinding operations suggested by 3M Methods Engineers. This fast, efficient finishing method helps maintain a low retail price.

Polishing Gladiron* gray iron drive housings on one of several backstand belt grinders now in use by Thor cuts finishing time in half. This one operation alone saves \$6000 a year in finishing costs.



How belt grinding saved the makers of Thor Gladirons* \$20,000 a year

Since a 3M Methods Engineer surveyed the grinding and finishing operations at the Thor Corporation . . . many former metal finishing methods have been replaced with 3M Abrasive Belts. Cost analyses show belt grinding is saving Thor \$20,000 annually, over previous methods of metal removal and polishing.

The 3M Method of Grinding and Finishing metals, wood,

glass or plastics . . . is a production line technique that replaces conventional methods of stock removal and polishing. Our Methods Engineers are trained in the mechanical application of coated abrasives, and are familiar with all metal finishing systems.

* REG. U. S. PAT. OFF.

Made in U. S. A. by
MINNESOTA MINING & MFG. CO.
St. Paul 6, Minnesota

3M
ABRASIVE
BELTS



General Export: DUREX ABRASIVES CORP., New Rochelle, N. Y.
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Next time you light up...

REMEMBER— In resistors, as in cigarettes, there's one leading brand. IRC is the leader in resistors for radio, television and electronics because:

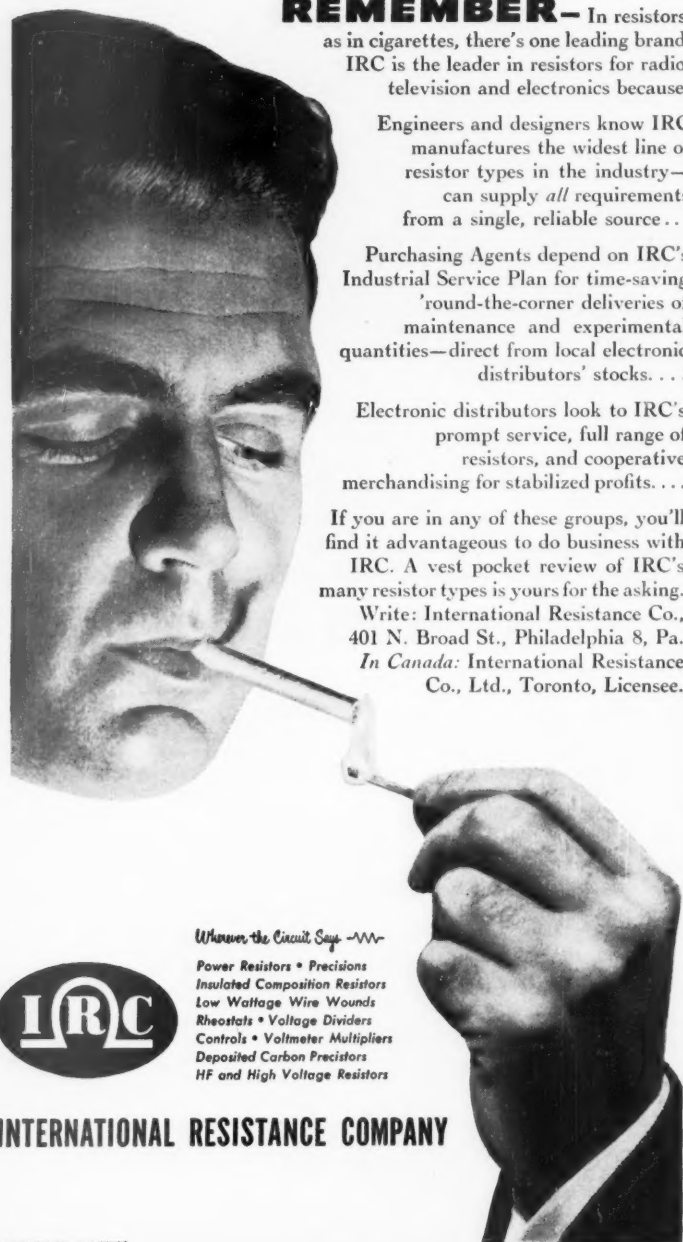
Engineers and designers know IRC manufactures the widest line of resistor types in the industry—can supply *all* requirements from a single, reliable source...

Purchasing Agents depend on IRC's Industrial Service Plan for time-saving 'round-the-corner deliveries of maintenance and experimental quantities—direct from local electronic distributors' stocks...

Electronic distributors look to IRC's prompt service, full range of resistors, and cooperative merchandising for stabilized profits...

If you are in any of these groups, you'll find it advantageous to do business with IRC. A vest pocket review of IRC's many resistor types is yours for the asking.

Write: International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.
In Canada: International Resistance Co., Ltd., Toronto, Licensee.



Whenever the Circuit Says ~~~~

Power Resistors • Precisions
Insulated Composition Resistors
Low Wattage Wire Wounds
Rheostats • Voltage Dividers
Controls • Voltmeter Multipliers
Deposited Carbon Precistors
HF and High Voltage Resistors



INTERNATIONAL RESISTANCE COMPANY

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Engineering Standards Challenged by New Resistor

A new development in the field of electrical resistance is in process of obsoleting present engineering standards. It's International Resistance Company's new fixed composition resistor, warranted to meet Joint Army-Navy Specifications (JAN-R-11).

Designated as Advanced Type BT, and produced in $\frac{1}{8}$, $\frac{1}{4}$, 1, and 2-watt ratings, this new resistance unit is specifically engineered to the requirements of modern television and government electronics. It affords unusually favorable characteristics in high ambient temperatures, voltage, humidity, and conditions normally affecting radio parts.

Production experience on the Advanced BT resistors already totals over 100 million units, and rigid field tests have proved exhaustive laboratory findings. Full details are given in IRC's new 12-page, illustrated technical catalog, just off press. For your copy, write International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.

HIGH STABILITY + CLOSE TOLERANCE

Type DC DEPOSITED CARBON PRECISTORS

Especially designed to give accuracy and economy in close-tolerance applications. Ideally suited to critical television, electronic, metering and voltage divider circuits where long stability is important... or carbon compositions are unsuitable and wire-wound precisions too expensive. Bulletin B-4 gives full technical data, characteristics, specifications. Write for your copy to International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa. In Canada: International Resistance Co., Ltd., Toronto, Licensee.

DCF—200 ohms to 5 megohms
DCH—500 ohms to 20 megohms
Tolerances—1%, 2%, 5%

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IRC

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"trunk" extends 50 ft. into the ground. Six circular and seven square floors are cantilevered out like branches from this trunk. The round floors, 38 ft. in diameter, are wholly inclosed by circular glass walls within the outside square walls of the building. The outside walls are to be constructed of horizontal glass tubes.

The core or "trunk" contains an elevator shaft for a round elevator; heating, ventilating, and air-conditioning ducts; stairways, piping, and other facilities.

• **Special Elevator**—Otis Elevator Co. designed the elevator, which even has circular counterweights, and doors. The canopy of the car will be domed. The car will travel up the 15 stories in 20 sec., will handle 10 passengers in one load.

• **Advantages**—The structure's odd shape has specific advantages. For example: (1) Building the laboratories around a central core permits concentration of all service facilities, cuts down complex installation problems. (2) Putting one lab-unit directly over another, connected by high-speed elevator service, is expected to afford easier and quicker intercommunication than would a conventional one- or two-story building. (3) Vertical layout, with alternating round and square floors, glass-walled, is supposed to provide a maximum of natural light for researchers to work in.

NEW STANDARD FOR TV

British and Dutch firms have set a new TV standard for the Continent. Their proposal: broadcast pictures with 625-line definition. (In this country we use 525-line definition; that is, the electron beam scans the screen 525 times in 1/30th of a second.) Current British practice is to use 405 lines; the French use 519 lines.

In on the agreement are the Dutch firm, N. V. Philips Gloeilampfabrieken, of Eindhoven, and four leading British manufacturers: Electric & Musical Industries, Ltd.; General Electric Co., Ltd.; Marconi's Wireless Telegraph Co., Ltd.; and Pye, Ltd.

MORE WAX FOR THE WEST

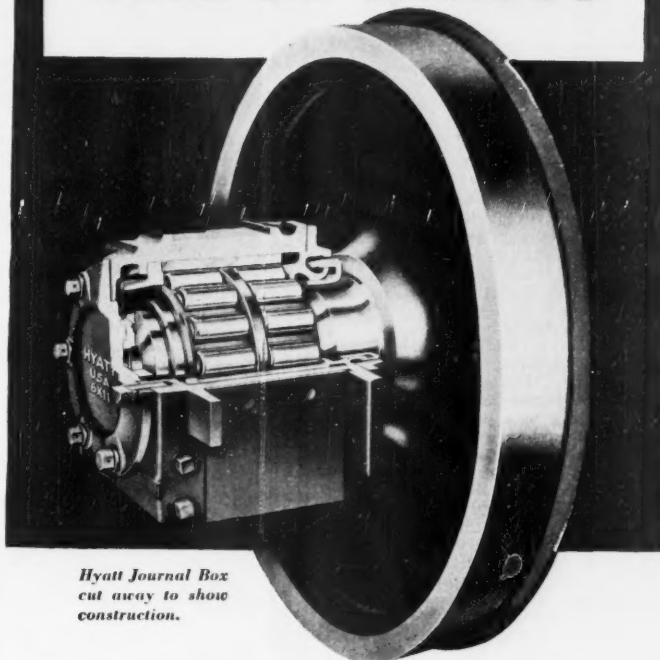
A new plant, scheduled to make 45-million lb. of wax a year, is now in operation on the Pacific Coast. Standard Oil Co. of California built it at the company's Richmond refinery. The new plant will supply Pacific and western markets.

Wax has been in short supply on the West Coast. The only other wax plant there is at Oleum, Calif. Union Oil Co. of California runs that one. And Standard expects that the new plant it is operating will build bigger markets for wax on the Coast.

NAME TRAINS



ROLL ON HYATTS



Hyatt Journal Box cut away to show construction.

Have you noticed how smoothly and easily those "name trains" start and stop?

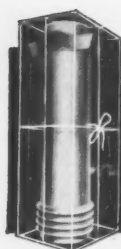
Credit the roller bearings in Hyatt Journal Boxes with much of this smooth operation.

And on their way, with green lights ahead, Hyatts add riding comfort to even the longest trip. Dependability is proven by the fact

that many Hyatt Journal Boxes have traveled nearly three million miles, and are still rolling.

For your traveling comfort you'll be glad to know thirty-one railroads are now equipping their new passenger cars with Hyatt Journal Boxes. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS



Packaged HEAT

FOR YOUR PLANT

Are you concerned about the high heat costs for your factory or warehouse? Then you must learn about "THERMOBLOC Packaged Heat." This most talked-of advance in industrial heating can appreciably lower your costs.

Whether your area measures hundreds of square feet or acres of floor space, THERMOBLOCS, strategically located, each occupying a spot 30" in diameter, will heat approximately 4,000 sq. ft. of adjacent area. Each has its own combustion chamber and automatic burner for oil or gas, and circulates live warm air at the working level of your personnel. No unnecessary heating at the roof level. High heat efficiencies of 82-86%.

At the command of the thermostat, THERMOBLOC instantly delivers heat without expensive air ducts, steam piping or radiators. During weekend or night shut-down, there are no boilers to bank, no pipes to freeze, no fuel to burn. In summer, THERMOBLOC draws the cool air from the floor level and circulates it by a powerful fan to the working level.

Connect the fuel and power lines and start up. (Just the thing for construction jobs also.) Standard design "THERMOBLOC Packaged Heat" means units in stock for immediate delivery that can be installed inexpensively in a few hours. Total cost is approximately $\frac{1}{3}$ as much as for a steam or hot water installation.

This remarkable advance in modern heating methods is interestingly explained in the new bulletin for executives, "HEAT—Where you want it . . . When you want it!"

Send for your copy at once.

THERMOBLOC DIVISION PRAT-DANIEL CORP.

Manufacturers of Thermix Power Plant Equipment

68 Water Street, East Port Chester, Conn.

Gentlemen:

Please send me your bulletin HEAT—Where you want it . . . When you want it!

Name _____ Title _____

Company _____

Address _____



1 Peppermint grows like alfalfa. Planted from root stocks, it may reach three or four feet by harvest. Pacific Northwest's climate is big asset

Pacific Peppermint in Boom

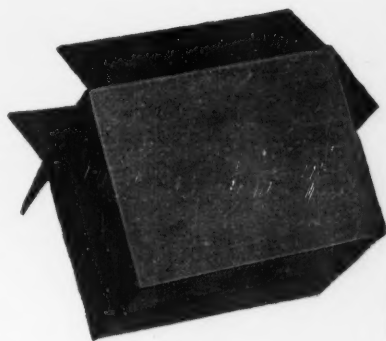
Northwest takes over as nation's No. 1 peppermint-oil supplier. Scientific farming, new refining processes yield quality crop.



2 Harvesting peppermint is like cutting hay. The plant is dried for 24 hours, distilled. Large farms have their own stills; small ones usually pool up (TURN TO PAGE 58)

The proof of value
is the Pedigree

In boxes, too!



PROOF OF *Quality*
PROOF OF *Service*
PROOF OF *Fair Price*

A box with a pedigree? Yes, you can trace a Union 100% Kraft corrugated container all the way back to Union's own forests. Every step in manufacture, from tree to finished box, is quality-controlled by one responsible management, operators of the largest Kraft pulp-to-container mill in the world.

And more than that: For more than 75 years Union has been the leader in paper packaging, producing specification bags for hundreds of industries.

The same skill in production, the same vast forest resources and mass production economies



THE ENGLISH SETTER, stately in appearance, has been favored as an excellent bird-dog by sportsmen for almost four centuries. He is very gentle and lovable in disposition. He needs plenty of space and exercise in order to be happy, so never confine him to close quarters!

which have put Union at the top in paper packaging have also built a containerboard business which last year accounted for nearly 6% of America's total tonnage of Kraft boxes.

Today Union's board is going into corrugated containers bearing the pedigree mark of the famous Union shield.

This emblem identifies an organization which, for three quarters of a century, has been fully conscious of its responsibilities to customers who must depend on the reliability of their container source for the continued operation of their own plants.

UNION *Corrugated Containers*
UNION BAG & Paper Corporation

Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N. Y.

Corrugated Container Plants: SAVANNAH, GA. • CHICAGO, ILL. • TRENTON, N. J.



Where in the world can we help you?...

The United States.

Ebasco helps firms solve such problems as costs, production, expansion, finance, etc.

Frankfort, Germany.

Ebasco made appraisals of industrial properties in American Zone for reparation purposes.

Venezuela.

Ebasco is building a complete new community on Lake Maracaibo for a petroleum company.

Shanghai, China.

Ebasco designed and constructed a major extension to a steam electric station.

Chennai, India.

Ebasco is designing and supervising the construction of India's first large newsprint mill.

These instances, while depicting a small sampling of Ebasco's worldwide activities, are representative of a few of the services Ebasco is equipped to offer you—anywhere.

At home or abroad, consider Ebasco as your reserve team of specialized manpower—available to help you at any time on problems of engineering, construction and business operation.

Teamwork is routine for Ebasco men. Each Ebasco specialist calls on other Ebasco specialists for advice and information. They work as teams on bigger problems. Ebasco's staff means a vast reservoir of experience available to you.

Write for your copy of the booklet "The Inside Story of Outside Help" describing the many Ebasco services available to you. Ebasco Services Incorporated, Two Rector Street, New York 6, N. Y.

EBASCO SERVICES INCORPORATED

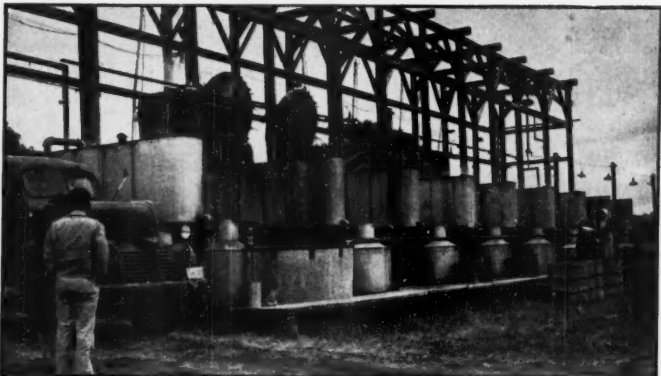
Two Rector Street New York 6, N. Y.

Ebasco Teamwork gets things done anywhere in the world.

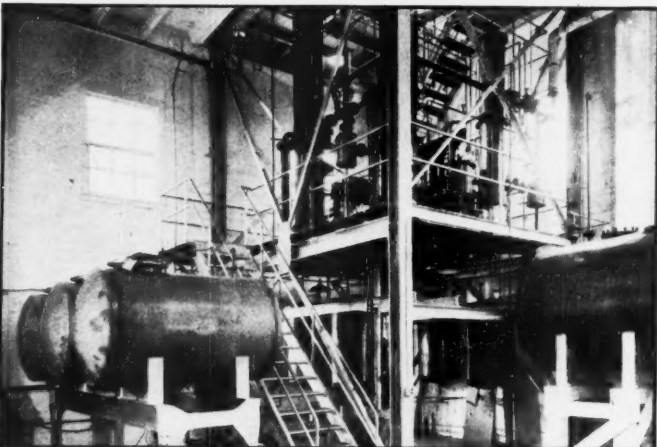


Appraisal • Budget • Business Studies • Consulting Engineering
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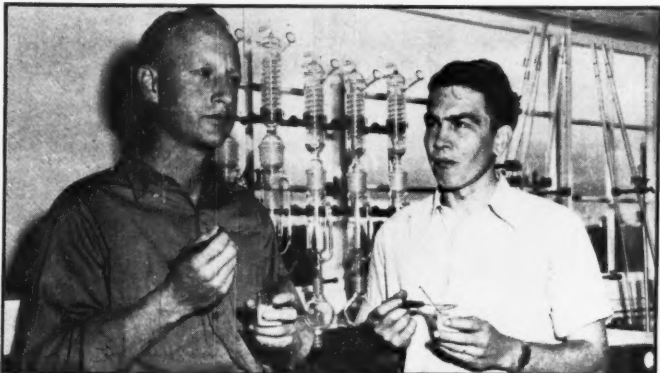
PEPPERMINT (continued from page 56)



3 In big tanks, the partly cured peppermint hay gets a steam bath. The vapor condenses into a mixture of oil and water, which flows into a decanter. Oil is decanted off



4 Continuous-process still, built by I. P. Callison, stands four stories high, has two rectifying columns. Oils of various qualities are drawn off at various levels



5 Peppermint-oil chemists have to have keen tongues. Here chemists Paul Tornow (left) and Joseph Chrobuck sample finished product for Callison to see if it meets standards

Cash Crops

Callison adds peppermint as new line for \$5-million business built on Pacific botanicals—cascara, digitalis.

In horse and buggy days, I. P. Callison was a small-town feed dealer in Clehalis, Wash. But he didn't stick to his feed-bags. He took a look at what his region offered, and branched out into botanicals. He bought and shipped the dried bark of the scrubby cascara tree, which grows only in the rain belt stretching along the north Pacific Coast from northern California into British Columbia. And then he started expanding.

• **Volume: \$5-Million**—Today, I. P. Callison & Sons, Seattle, does an annual volume of nearly \$5-million. It supplies 70% of the world's cascara, and 60% of the nation's digitalis. It ships its Robin Hood brand of florists' greens in carlots throughout the U. S. And since 1940, Callison has taken the lead in developing the Pacific Northwest peppermint industry.

• **New Developments**—This week, Callison was watching two of its newest developments, just recently out of wraps. Both are firsts in the cascara and peppermint-oil industries:

(1) Equipment for reducing cascara bark to a soluble powder, much the way instant soluble coffee is made. The process saves 75% of the shipping weight, gives pharmaceutical houses a product which has uniformly high quality and one which is all ready for manufacture into finished products.

(2) A \$100,000 continuous-process still for rectifying peppermint oil. (Rectification is purification by redistillation.) Callison's chief chemist, Paul Tornow (picture, page 58), designed it, with the help of E. B. Badger & Sons, Boston. The rectifying still allows greater refinement, more exact isolation of fractions, and precise quality control. These add up to uniformity of finished product. The company isn't talking about the details of the process. But one fact will give you a hint of what the company has in mind: The still has capacity to handle more than the entire Northwest crop.

• **Cascara**—It was way back in 1903 that Callison moved into the cascara business. He started out buying bark from farmers who came into his feed store. Then he set up agents—usually feed and grain dealers—in the producing areas, authorized each to buy on his own draft, much the way Hudson's Bay Co. had done with its fur posts.

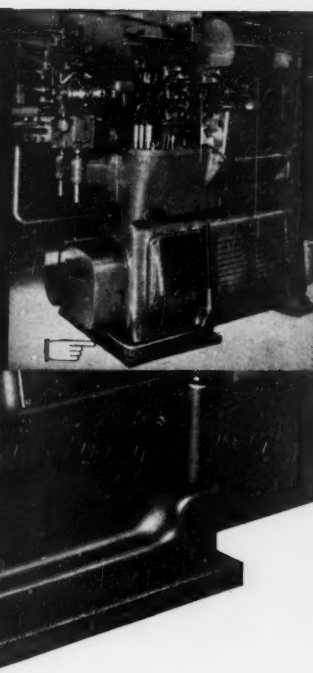
Nowadays, the agent has a draft book from Callison. When a peeler brings

Telechron

SOLVES

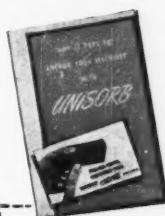
Machine Anchoring

PROBLEMS



by "Mounting It On

UNISORB"



This leading clock manufacturer cut installation time materially when UNISORB machine mounting came into the picture.

They cut transmitted machine vibration 60% to 85%. They eliminated the need for old-fashioned, destructive floor-drilling in most instances—because UNISORB requires no bolts or lag screws.

Your company can do the same. Clip and mail coupon today.

The FELTERS Company

210-Q SOUTH STREET, BOSTON 11, MASS.

Gentlemen:

Please send my free copy of "Why It Pays To Anchor Your Machines With UNISORB."

Name

Title

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Makers of FELTS

in all colors, thicknesses, consistencies, qualities . . . for all purposes. Rolls, strips, sheets and precision cut felt parts.

What A Shortsighted Girl!



Correction! What a shortsighted employer! It's a hundred to one this girl is working in an office where the lighting is just plain bad—where too much glare, too many shadows, too many contrasts add up to a typically bad visual environment. Result: fatigue brought on by ineffective seeing. Result: a typically "shortsighted" girl producing 5, 10, 15% below her potential. Bad lighting is bad business. Good lighting is a basic business tool.

Wakefield Over-ALL Lighting is just that—a business tool for increasing office efficiency. Wake-

field finely engineered lighting equipment[®] is an essential component of a comfortable, *productive* visual environment. The Wakefield lighting specialist in your area will show you how to provide an environment in which your office workers (and your business!) will no longer suffer from short-sightedness. Let us help. Write to The F. W. Wakefield Brass Company, Vermilion, Ohio.



Wakefield Over-ALL Lighting

For Office • Drafting Room • Store and School

A BASIC BUSINESS TOOL

in bagged cascara bark, the agent records the supplier's name, the amount, and the price. The peeler walks out with a draft negotiable at any bank. The agent sends a carbon copy to Callison as a warehouse receipt.

Yearly output of Callison cascara is 44-million lb.

• **Digitalis**—Another Callison venture was making digitalis. That drug, made from the leaf of a foxglove, is used for some types of heart disease. Callison produced it during World War I, when European manufacturers fell out of the picture. But Callison's big spurt came, in 1937, when a major user of digitalis asked Callison to try to make a superior product. Again, the company had its raw material in its backyard. Foxglove grew wild in the Pacific Northwest.

So Callison went to work on the foxglove, developed a delicate drying method. Today, the company is the biggest supplier of the U.S. market. Now it is trying out growing the plant commercially.

• **And Now Peppermint**—But the newest product, and the one in which the company invested most heavily, is peppermint oil. For years, Michigan and Indiana were the peppermint center of the nation. Then in 1925 a disastrous crop failure sent the price of peppermint oil from \$3 to \$25 a pound. The fancy price spurred production in the Pacific Northwest. Thanks to irrigation, the region had plenty of water. And it had the right climate.

Last season, for the first time, the Pacific Northwest led the nation. Peppermint-oil production in Washington and Oregon reached 785,000 lb. Northwest yield is setting new records, averaging around 50 lb. of oil to the acre, compared with 25 to 35 in the Midwest.

• **Keep That Flavor**—Peppermint flavoring turns up in chewing gum, dentifrices, candy, and other products. Chewing gum alone takes about half the crop. But it's hard to keep the flavor strictly to buyers' standards. Peppermint oil from the Northwest tastes different, in its natural state, from eastern mint. And even in the same area, flavors vary from farm to farm, and with the time of season the mint is harvested. That's where blending and rectifying come in.

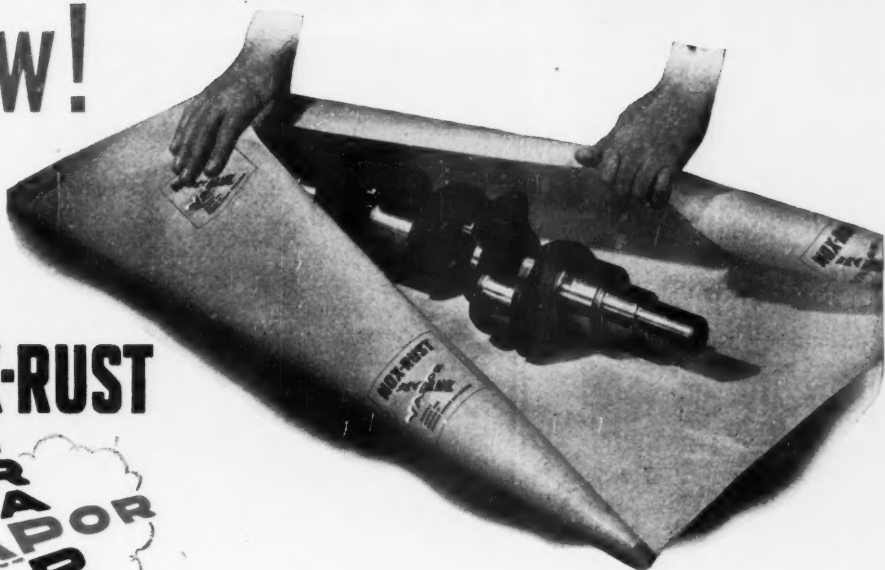
Spearmint is another crop that Callison has its eye on. The company is sponsoring experimental spearmint plantings. Last year's crop—the Northwest's first—was extremely successful, the company reports. Nationally, spearmint-oil production is about half as big as peppermint oil.

• **All in the Family**—The Callison concern is a family affair. At 78, I. P. Callison, founder, is still a partner. But management is in the hands of three of his sons: Henry, Cecil, and Clarence. A fourth son, Dr. R. Donald Callison, is an inactive partner.

New!

NOX-RUST

WRAPPER



Huge Savings in Packaging with the Wrapping Paper that Prevents Rust

No more coating with grease or messy oil! No more cleaning! NOX-RUST presents an entirely new approach to corrosion prevention to deliver your product in the same condition it left the factory—ready for instant use without degreasing or cleaning. Think of the huge savings in the packaging of spare parts! Think of the tremendous sales appeal!

Will revolutionize packaging. Industry will benefit untold millions by the elimination of coating and cleaning. Shipping containers can be simplified and made less expensive. Storage is no longer a problem. Whether your product is shipped to the Arctic or the Tropics, it is ready for immediate use upon unpacking.

NOX-RUST Vapor Wrapper is a glassine laminated kraft paper treated with a new chemical developed by independent research in NOX-RUST laboratories. The impregnated chemical vaporizes slowly and permeates throughout the package. This vapor covers every surface of the metal and prevents all corrosive action of both moisture and air. Wrapper need not be sealed or even tightly wrapped. The vapor arising from it is unseen, odorless, non-toxic and non-injurious to the skin.

Write today for complete information on this revolutionary rust preventive wrapper. NOX-RUST Vapor Wrapper is a proven product developed by the leading maker of rust preventives. The chemical is the result of five years of research by NOX-RUST laboratories and has no relation through license or otherwise with any similar product now on the market. Your inquiry will receive prompt attention.

NOX-RUST CHEMICAL CORPORATION

DETROIT

SAN FRANCISCO

2441 So. Halsted Street, Chicago 8, Illinois

WASHINGTON

SOUND-PROOFING DIVISION
Industrial Sound Deadeners.
NOX-SOUND Automotive Undercoatings.

INSULATING DIVISION
Mastic Type Insulating Compounds.

VAPOR WRAPPER DIVISION
Chemically Impregnated Paper.

RUST PREVENTIVE DIVISION
Solvent, Grease, Oil and Plastic Types Rust Preventive Compounds.



RUST IS DEADLY TO METAL

Once started, rust destroys relentlessly. Around the clock it ravages property... industrial plants, public utilities, at home and on the farm. This metal-consuming scourge rolls up an annual damage bill that costs the nation in excess of \$6 billion a year. Where there's metal, rust always threatens—unless protective steps are taken.

STOP THIS DESTROYER With RUST-OLEUM

You'll find RUST-OLEUM the perfect answer to the problem of stopping rust, indoors or out. It adds years of extra use to all metal equipment and surfaces—roofs, gutters, smokestacks, fire escapes, underbody of trucks and automobiles, and hundreds of other rustable properties. Furthermore, even where rust has already begun, Rust-Oleum prevents further damages. It can be applied directly to rusted surfaces—by brush, dip or spray—and dries to a firm, elastic protective coating that is highly resistant to rain, snow, dampness, calcium chloride, salt air, heat, fumes and ordinary weathering.

Tell Us Your Rust Problems

Prove the protective qualities of Rust-Oleum to your own satisfaction. If you have a rust problem, give us the details. We will send you full information on Rust-Oleum with specific recommendations for application. It's available in aluminum and all colors.

SEE OUR COMPLETE
CATALOG IN SWEET'S,
OR WRITE TODAY!



RUST-OLEUM CORPORATION
2423 Oakton Street • Evanston, Illinois

RUST-OLEUM

Stops Rust

NEW PRODUCTS



Warm-Air System

General Electric Co.'s Air Conditioning Division has a new warm-air heating system for homes called Air-Wall Heating. Its engineers say it will cut installation costs in half, give draftless circulation.

Instead of regular ducts, which must be tailor made, the system uses prefabricated 4-in. ducts similar to stovepipes. The company will ship Air Wall Heating in packaged units with enough prefabricated stovepipes, joints, and vents for eight outlets. Two men can install the system in a six-room house in a day's time.

One register will usually do for the average room. It is placed in the cold (outer) wall. The air is forced through the system at a higher temperature and velocity than in present systems; it comes out of the register in a fan-like pattern, heating the wall above the outlet. Because the warm air goes up—not out—sofas and beds can be placed close to the register.

G.E. has experimented so far only on small, two-floor houses, but may later try the system in larger buildings. Address of G.E.'s Air Conditioning Division is Bloomfield, N. J.

• Availability: one week.

Stretch Tester

Complex materials, like plastics and textiles, are tough to test—particularly when you want to find out how much they "stretch" under load. That's because their physical properties are closely interrelated; the results often depend on how fast you apply the load.

Now Instron Engineering Corp. says it has a machine that is flexible enough to give accurate control of load conditions.

The Tensile Tester uses an electronic weighing system, is based on the principle of a strain gage. It's designed so you can apply loads ranging from 2 grams to 5,000 lb. to the sample. The "stretch" action is controlled by a pulling jaw; its speed runs from 0.02 in. to 20 in. a min. A high-speed recorder, geared to the jaw, charts the results as a load-elongation curve. The company is located at 2 Hancock St., Quincy, Mass.

• Availability: immediate.

Lighting Up and Down

A fluorescent light fixture designed to cut overhead gloom of factory ceilings is now on the market. Holdenline Co., Cleveland, says its fixture applies office-type fluorescent lighting to industrial use. It costs about as much as commercial fluorescent lighting—and only a little more than the conventional industrial fixture.

The Holdenline factory fixture sheds light above as well as below. What does the trick is a wing-like shade of translucent polystyrene plastic attached to the lamp. It does away with the contrasting shadows and light that cause eyestrain. Holdenline's address is 2301 Scranton Rd.

• Availability: immediate.

Show-Window Turntable

Macton Machinery Co., Inc., has worked out a special turntable for re-

tailors' store window moving displays.

The table is turned by a friction drive, powered by a $\frac{1}{2}$ -hp., 110-v. motor. Speed is 1 r.p.m. Top of the table is 48 in. in diameter; total weight is about 300 lb. The model's capacity—1,000 lb.—is big enough to handle refrigerators, washing machines, or automobile engine blocks. A built-in current-collector ring allows the window designer to use lights in the display. All steel-welded, the table has heavy-duty ball bearings for the revolving top. Macton's address: 140 Cedar St., New York 6.

• Availability: two weeks.



Crop Blower

Filling the barnyard silo is now a smoother and faster job for the farmer. A machine that automatically "blows" forage wherever the farmer wants it, has been put on the market by New Holland Machine Co., farm-machinery subsidiary of Sperry Corp.

The machine can handle 20 tons of hay—or 25 tons of chopped corn—an hour. The operator dumps the load from his truck into a trough in which runs a conveyor belt. The forage moves fast enough so that it doesn't pile up as it is unloaded; a patented leveling device prevents jamming as it feeds into a 42-in. fan at the other end of the trough. The fan blows the fodder through an 8-in. pipe anywhere the farmer wants to "aim" it.

The manufacturer's address: New Holland, Pa.

• Availability: April.

Foot-Control Vise

Two standard units—a vise and a hydraulic pump—have been put together to make a foot-operated machinist's vise. Designers at The Columbian Vise & Mfg. Co., 9017 Bessemer



YOU'VE just driven 70 miles in your car equipped with Borg-Warner Automatic Overdrive. Every mile has been restful, relaxed—free from fatiguing engine vibration and noise. And you've saved enough gas to take you up to 30 miles further.

That's because the B-W Overdrive cuts engine revolutions 30% at speeds above 26 miles per hour. At 50, for instance, your engine's

lazy along at 35. That means less engine wear, too—longer life and fewer repair bills.

The Automatic Overdrive is a development and product of B-W's Warner Gear Division. It is typical of the advanced engineering and precision production with which Borg-Warner serves America... through the automotive, aviation, marine, farm implement and home appliance industries.

B-W ENGINEERING MAKES IT WORK

B-W PRODUCTION MAKES IT AVAILABLE



Almost every American benefits daily from the 185 products of

BORG-WARNER

THESE UNITS FORM BORG-WARNER, Executive Offices, Chicago:

BORG & BECK • BORG-WARNER INTERNATIONAL • BORG WARNER SERVICE PARTS • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR STOVE • FRANKLIN STEEL • INGERSOLL STEEL • INGERSOLL UTILITY UNIT • LONG MANUFACTURING • LONG MANUFACTURING CO., LTD. • MARBON • MARVEL-SCHERER CARBURETOR • MECHANICS UNIVERSAL JOINT • MORSE CHAIN • MORSE CHAIN CO., LTD. • NORGE • NORGE-HEAT • NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • SUPERIOR SHEET STEEL • WARNER AUTOMOTIVE PARTS • WARNER GEAR • WARNER GEAR CO., LTD.



Continuous cleaning of conveyor chain with brushes simplifies maintenance at General Electric Refrigerator Plant



The new conveyor method of assembly employed at the General Electric Refrigerator Plant, Erie, Pa., is the last word in modern production practices. Here, starting with a compressor unit, a new General Electric Refrigerator literally grows before your eyes as it moves from one operation to another at a speed

of 27 feet per minute.

But new ideas create new maintenance problems. At one point in the operation the conveyor chain passes through a rust-proofing solution. This results in a deposit of scale which must be removed from the chain. At first the chain was removed and cleaned in a caustic solution—obviously a costly and time-consuming operation.

Then an Osborn sales engineer was asked for suggestions. The answer and solution is shown above. An Osborn Disc Center Wire Brushing Wheel is mounted on either side of the chain. Revolving with the chain as it emerges from the bath, the brushes remove all dirt and scale. Cleaning is instant and continuous at a mere fraction of former costs.

Time and money-saving ideas such as this are the stock-in-trade of Osborn sales engineers. It's the application that counts and the brushes are only the means to an end. This premium service costs you nothing, may save you much. For complete information write—

THE OSBORN MANUFACTURING COMPANY

Dept. 101, 5401 Hamilton Avenue

Cleveland 14, Ohio



WORLD'S LARGEST MANUFACTURER OF BRUSHES FOR INDUSTRY

Ave., Cleveland 4, worked up the combination.

A large pedal in a floor unit controls the closing of the vise and the application of pressure. On the upper stroke of the power pedal, you get a slow, short movement of the vise jaw; the lower stroke steps up the closing speed. Once the vise is closed, you can apply pressure with a couple of strokes of the



pedal. Maximum gripping pressure between the jaws is about 3,600 p.s.i. A safety valve protects the tool against overloading.

You can close the jaws, the makers say, without crushing or marring light castings or finished surfaces. To show how fine an adjustment you can make, they closed the jaws on an egg. Other features: enclosed hydraulic mechanism; swivel base that pivots 180 deg.; stationary back jaw, moving front jaw; replaceable jaw faces.

• Availability: immediate.



"The Omaha Incident"

**PROVES ANOTHER ADVANTAGE OF
SPEED NUTS*
TO GRAND HOME APPLIANCE CO.**

A few months ago, Grand Home Appliance Co., Cleveland, Ohio, shipped a carload of their new Grand Gas Ranges to an Omaha distributor.

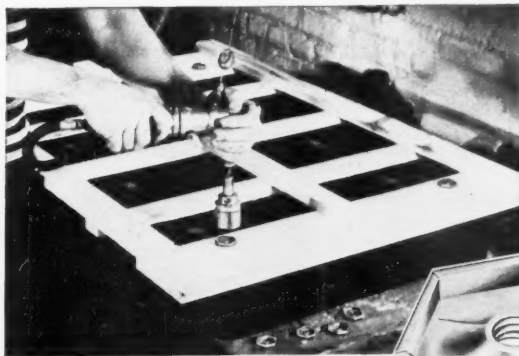
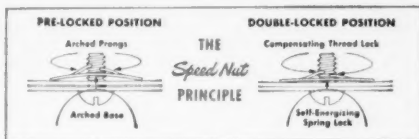
The ranges were attached to their crates with conventional nuts, bolts and washers. For test purposes, however, six of the units were secured to their crates with Tinnerman's new Crating SPEED NUTS.

As it turned out, the distributor found most of the units had been damaged in transit and he had the entire shipment returned to Cleveland. When Grand inspected the carload, they found that all but six of the ranges had vibrated loose from their crates and were extensively damaged. These six, still in perfect condition, were the units that had been tightly secured with Crating SPEED NUTS!

It's easy to see why Grand Home Appliance Co. is now using more and more SPEED NUTS. What

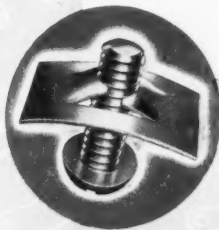
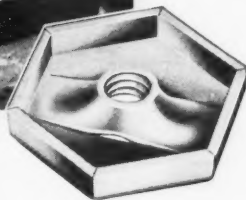
about your fastening problems? Perhaps Tinnerman can help you solve them. Send for details on our Fastening Analysis Service . . . now, Tinnerman Products, Inc., 2040 Fulton Road, Cleveland, Ohio. Sales offices in principal cities.

In Canada: Dominion Fasteners Limited, Hamilton
In England: Simmonds Aerocessories, Ltd., Treforest
In France: Aerocessaires Simmonds, S. A., Paris



The lower section of a Grand range, shown at left, is being secured to the crate base with four Crating SPEED NUTS. This operation requires only one quick application of power tool to part.

Revolutionary, self-locking SPEED NUT C6888. Ends shipping damage caused by vibration . . . cuts material costs . . . saves time, work and money.



TINNERMAN

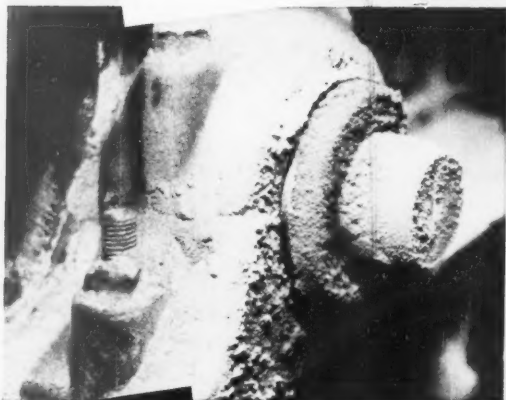
Speed Nuts

*Trade Mark Reg. U. S. Pat. Off.

FASTEST THING IN FASTENINGS

LICK THESE PROBLEMS

*-and you cut
production costs!*



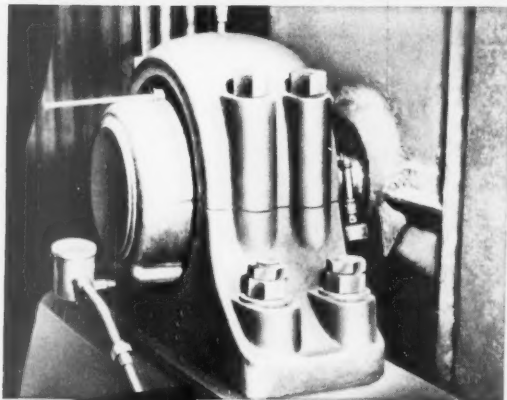
DUST-

When you grind mica, you get *dust*. It seeps everywhere—except into Dodge-Timken Type C Bearings which keep this mill running at 300 r.p.m.! Dodge's Type C triple seal solves the problem of abrasive dust.



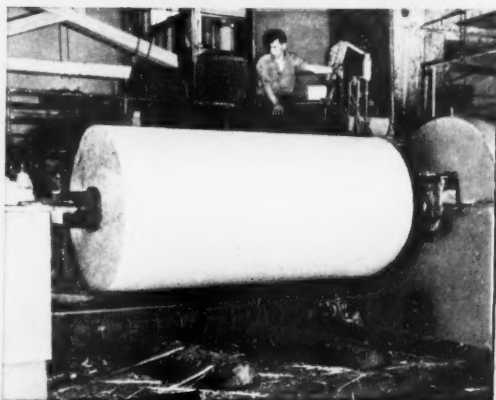
WATER-

Operating under constant drenching, a normal condition in paper mills, Dodge-Timken Special Duty Pillow Blocks perform dependably with the protection of a Dodge-developed automotive type piston ring seal which *keeps water out!*



HEAT-

In a chemical plant the huge fan carried by this Dodge-Timken pillow block operates in temperatures ranging from 220 to 900 degrees Fahrenheit. Dodge created oiling and sealing methods which keep the bearings properly lubricated.



LOAD-

Imagine the shock when the peeler knife of this veneer lathe slices logs into sheets—with 150 to 200 clutch engagements per hour. Dodge Diamond D Clutches and Dodge-Timken Bearings carry the loads in 23 major plywood plants.

NEW

POWER TRANSMISSION MACHINERY

MODERNIZES OPERATIONS

SAVES POWER

IMPROVES PRODUCTION

Put more power on the job in your plant by modernizing with Dodge products. In thousands of plants throughout the world smart engineers and maintenance men have applied Dodge "firsts" in mechanical power transmission to increase production, cut costs and save power.

New and better V-belt drives, bearings, clutches and other drive components, applied to your machines can help get your costs in shape for more competitive markets.

Whatever the special power transmission problems may be in your plant, the Dodge Transmissioneer—your local Dodge distributor—is qualified to help you solve them efficiently, economically. He's factory-trained to analyze your needs and recommend the correct Dodge equipment. Why not call him now? Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE MANUFACTURING CORPORATION • MISHAWAKA, IND.

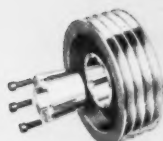
FIRST IN POWER TRANSMISSION MACHINERY!

DODGE

of Mishawaka, Ind.

CALL THE TRANSMISSIONEER

Established in 1914, the Dodge school of Transmissioneering now has 164 active graduates. The number is constantly growing. There is a Transmissioneer near you. He can help you find the answer in applying power to the job.



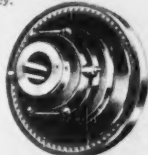
A DODGE "FIRST"

TAPER-LOCK Shavers
Revolutionary . . . the simplest surest mechanism ever devised for holding wheels to shafts. Easy on, easy off — saves time and money.



A DODGE "FIRST"

Dodge-Timken Bearings
Dodge mounts, seals and houses the famous Timken Roller bearing, delivers a pillow block of new high quality, ready to lock on the shaft and carry power loads with new efficiency.



A DODGE "FIRST"

Rolling Grip Friction Clutch. No toggles! Smooth as a rolling ball with the positive grip of a wedge. Easy, positive, smooth engagement.



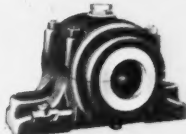
A DODGE "FIRST"

TAPER-LOCK Flexible Coupling. Available from stock and ready to install without re boring. Famous TAPER-LOCK Bushing fastens to shaft with firmness of a shrunk-on fit.



A DODGE "FIRST"

Dodge "SC" Ball Bearing Pillow Block — the bearing with a new type, Neoprene metallic backed seal that won't blow out under pressure lubrication.



A DODGE "FIRST"

Slewball Pillow Block
A precision built, ring-oiling babitted bearing, fully self-aligning. Available from stock in both plain and water cooled types from 1-1/16" to 8".



Let's sit down together -

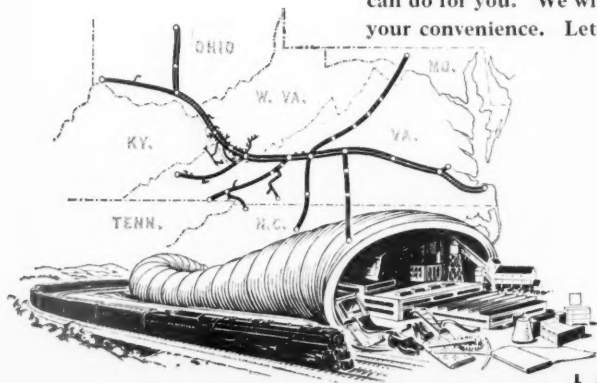
A thorough knowledge of the great Land of Plenty served by the Norfolk and Western . . .

A good understanding of the problems of manufacturing and marketing as related to plant location . . .

For almost a half-century, the N. & W.'s Industrial and Agricultural Department has assisted discerning manufacturers in locating plants as profitably as possible. *This department is staffed by specialists with an average of 25 years experience in this business.*

These two assets qualify the Norfolk and Western's plant-wise Industrial and Agricultural Department to help you find the nearest-perfect site for your new plant . . . to act, without obligation, in the gathering and screening of facts you need.

Write to the Industrial and Agricultural Department, Drawer B-202, Norfolk and Western Railway, Roanoke, Va. Tell us your specific plans. Let us go to work, in strictest confidence, and tell you exactly what *The Land of Plenty* can do for you. We will be glad to arrange a conference at your convenience. Let's sit down together -



Norfolk and Western RAILWAY

Look to *The Land of Plenty* - the six great states served by the Norfolk and Western - for natural and man-made advantages which help to keep the cost low for manufacturing and distribution.

LAND OF PLENTY

MARKETING

Copper-for-Homes Drive

Revere, which recently brought out packaged sheets for home-flashing, now takes its sales campaign to the public—cautiously. Hopes to make copper flashing as popular as copper pipe.

One axiom that most marketing men keep pasted in their hatbands is this: If you broaden the base on which your market potential rests, you can raise a higher sales pyramid.

• **Goal: Home Market**—That's one reason industrial suppliers go into the consumer-goods field—and vice versa. Now it has led Revere Copper & Brass, Inc., to open a campaign to fit an extra 60 lbs. of copper into every U. S. home.

Here is Revere's aim: to convince home builders and owners that no house is really sound without copper flashing. Flashing is the weatherproof expansion joint around a chimney, in the roof valleys, and wherever two weather-exposed planes come together. The

main materials now used are building paper and galvanized sheet steel.

• **Packaging**—Once Revere has sold its prospect on the idea, it has a special package of home flashing to sell him (for \$21.95). Inside it are 30 lb. of 18x48-in. tempered copper sheets, 200 hardware bronze nails, and an instruction book on how to flash a house. Two packages, says Revere, are enough in most cases.

Revere brought out its home-flashing package 10 months ago. At first it concentrated on selling the system to the building trade. But last week the company finished drafting plans to take its story to the public. This year Revere's national advertising (which centers

THEY CAME, THEY SAW, THEY CONCURRED

Men like L. F. Donald of Chicago Milwaukee St. Paul and Pacific RR Co., E. A. Bask of the Chicago & Northwestern Ry. Co., C. M. House of the Gulf, Mobile and Ohio RR, and 100 like them don't gather together for a coffee klatch on a busy week day morning.

The thing that stopped these busy fellows in their tracks and brought them together in a single room for 3 hours was you.

We mean you busy execs who ride the trains these men operate.

You're their primary concern—no matter what they're looking at—a locomotive, a safety signal, a new steam generator—it's a mental image of you they are carrying in the backs of their minds . . . pleasing you is their business.

100 such RR execs gathered at the Vapor Heating Corporation plant recently to look over a new steam generator that provides more steam at greater efficiency than any steam generator known to man. It's called the **Intensi-Fired Steam Generator** because the intense fire in the combustion chamber is what makes this boiler such a hot subject.

*Next time you're poring over reports in a Pullman car far, far back at the end of a long train ploughing through a blizzard—take off your bedroom slippers for 10 minutes. If your tootsies stay warm, the diesel locomotive that's whipping you along the right-of-way is equipped with two of Vapor's **Intensi-Fired Steam Generators**. They're so compact that one of the 2500 lb. class will fit where one 1600 lb. generator formerly fit. Since there's only a certain amount of space in a diesel locomotive—that means 5000 lb. of steam where 3200 lb. used to sit. That provides an important reserve for longer trains, colder days or emergency needs.*

Here are some vital statistics: Two types—2500 lb. and 4000 lb. deliver 20% over ratings as maximum. Heat release of 1,000,000 B.T.U. per cu. ft. combustion space. Stack temperature, 500°. Full steam pressure in 2 minutes.

If you need a tremendous amount of heat in an economical, compact "package" write, wire or phone Dept. 110, Vapor Heating Corp., 80 East Jackson Boulevard, Chicago 4, Ill.



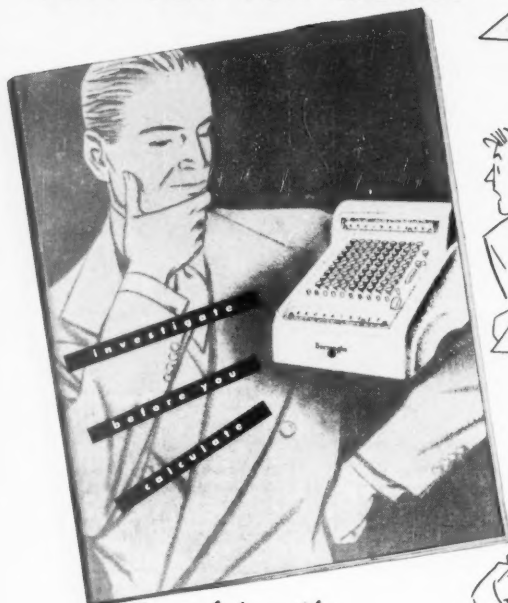
A New Note in Musical Merchandising

A showroom on wheels is one western retailer's answer to the buyer's market in musical instruments. A custom body on a General Motors truck enables Sherman, Clay & Co., San Francisco, to sound a musical sales pitch at your doorstep. The Musiccoach carries four spinet pianos, a Hammond organ, a Solovox, and a portable

set of Maas Vibra-Chimes. Primarily the coach is intended to reach into areas distant from the company's branch stores along the Pacific Coast. But it's also being used for organ and chime demonstrations to church committees, school boards, and fraternal organizations. Sales and deliveries are made directly from the coach.

Calculating

COST YOU TOO MUCH?



*Send for this
free booklet today!*

How does the kind of work to be done affect your choice of the right calculator? Can you reduce calculating costs by using new short-cut methods? What is the best way to judge the effective speed of a calculator? What is the relation of machine cost to operating cost?

Answers to these and many other questions about calculating are contained in the 16-page booklet "Investigate Before You Calculate." The information it provides will prove a helpful guide to getting work done in less time, with less effort, at less cost. Send for your copy now.

WHEREVER THERE'S BUSINESS THERE'S

Burroughs



Burroughs Adding Machine Company
6075 Second Avenue
Detroit 32, Michigan

Please send me a copy of "Investigate Before You Calculate."

Name _____

Address _____

City _____

State _____



around a "Quality House" theme) will point up the advantages of sealing roof joints with a couple of packages of Revere home flashing.

In this way Revere hopes to open up two new markets. One is the house that is already built, but could stand some "fixing up"; the other is the flock of new homes now building.

• **Pipe Pattern?**—Revere hopes that the home-flashing market will develop the way the market for copper water pipes for homes did. Before 1929, only a few homes had copper piping—and they were custom-built.

The merchant-builder (who erects the majority of U. S. homes on speculation, then sells them) was quick to pick up the idea. He figured he had a strong selling point in the corrosion resistance of the water system. Result: Copper piping has become standard equipment in most homes. And this means that the copper companies are putting from 100 to 300 lb. of copper into each new dwelling.

The home-flashing idea will add only about 60 lb. of copper to each house, but Revere thinks it ought to catch on even faster than piping did. The company's reasoning: The buyer can actually see the protective copper flashing on the roof. And besides looking efficient, it looks decorative.

Revere's home-flashing plan isn't the company's first sally into the flashing field. For several years Revere has supplied what it considers to be its share of the flashing business—but the business has been concentrated mainly in big buildings and in the 10% or less of homes that are architect-supervised.

• **Product Changes**—For its new drive, Revere has given its old flashing some new twists. One change is in the form of the product. Flashing traditionally was sold in long rolls: the builder tailored it to fit. In the new package, the copper is precut to 4-ft. lengths. This means that, even with amateur installation, the flashing can't expand enough to buckle or pull out the nails. And short sheets are easier to handle than long rolls.

Another difference is in weight. Tests, says Revere, have shown that home flashing used in short lengths need not be so heavy as it has customarily been—16 oz. a sq. ft. So the new product is considerably lighter than the old.

• **Careful Going**—Revere has had to tread lightly in promoting the new product. One reason: While the company wants wide distribution, it doesn't want to antagonize unionized sheet-metal workers. The company thinks that they might not like seeing the installation of copper flashing on a you-can-do-it-yourself basis. Despite this reservation, Revere's advertising copy brings out the fact that flashing a house isn't the toughest job in the world.



A typical laboratory

**... more than four miles of them ... in the great new
UNITED STATES NAVAL ORDNANCE LABORATORY**



A typical corridor

The U. S. Naval Ordnance Laboratory at White Oak, Maryland is one of the most modern and best equipped research and development establishments in the world. Comprising nearly 100 buildings on a 938 acre tract, it employs 2,300 people working in nearly every field of physical science and engineering.

Meeting the Navy's most exacting specifications, Mills standard and custom built partitions and wall linings and specially fabricated panels transform building interiors into offices, general laboratories, engineering and mechanical testing laboratories and many other enclosures. As White Oak's space needs change, these Mills partitions will be rearranged to fit the new requirements—quickly, easily, economically.

THIS IS one of the world's largest installations of movable steel partitions.

But *quality* rather than size is its most significant feature . . . quality that is characteristic of Mills Metal Partitions. These movable walls incorporate exclusive features . . . such as all welded construction of individual partition units and sound-deadening treatment of their surfaces . . . features that make Mills the demonstrably superior system for flexible division of floor space.

Insulated and sound proofed to provide ideal working conditions, Mills Metal Partitions are permanent in appearance and function. Yet they can be quickly dismantled and rearranged to meet changes in space requirements. In many instances the change can be accomplished over night or during a weekend.

Simple and refined in architectural design they are available in a wide variety of styles, durable finishes and attractive colors to meet specific requirements for buildings of every type.

Mills Metal Partitions can solve your space division problems. See the new 44 page Mills Catalog in Sweet's Architectural File for 1949 or write for your own easy-to-handle individual copy. Just ask for Mills Catalog 49-0.



THE MILLS COMPANY
963 WAYSIDE ROAD • CLEVELAND 10, OHIO



Cash in the Bank not in the Tank

A Cummins Diesel Engine powering a freight truck paid for itself in fuel savings alone in less than eight months.

Fuel and lube oil costs for the Cummins Diesel averaged 2.3 cents per mile as compared to the 5.1 cents per mile averaged by a gasoline-powered truck operating on the same run. Fuel savings with the Cummins Diesel during two years and 300,000 miles operation totaled \$8,400.00

You can bank on Cummins Diesels . . . and bank the money they'll make for you.

OK prove it!

Show me how Cummins Diesels (50 to 550 horsepower range) can save me money powering the equipment checked below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Highway trucks | <input type="checkbox"/> Pumps | <input type="checkbox"/> Locomotives |
| <input type="checkbox"/> OR-highway trucks | <input type="checkbox"/> Aggregate plants | <input type="checkbox"/> Motorcars |
| <input type="checkbox"/> Busses | <input type="checkbox"/> Sawmills | <input type="checkbox"/> Fishing boats |
| <input type="checkbox"/> Earth movers | <input type="checkbox"/> Planer mills | <input type="checkbox"/> Work boats |
| <input type="checkbox"/> Excavators | <input type="checkbox"/> Cotton gins | <input type="checkbox"/> Pleasure boats |
| <input type="checkbox"/> Log-handling equipment | <input type="checkbox"/> Feed and flour mills | <input type="checkbox"/> Generating sets |
| <input type="checkbox"/> Drilling rigs | <input type="checkbox"/> Ice and refrigeration plants | <input type="checkbox"/> Other (specify) |

NAME _____

ADDRESS _____

CITY _____

FIRM _____

STATE _____

CUMMINS ENGINE COMPANY, INC., COLUMBUS 2, INDIANA

Luring New Riders

To bring in new traffic, rail, air, and bus lines are polishing up an old technique—the tourist special.

When your business is hauling passengers, the traffic may come and go, but overhead runs on forever. So last week, with traffic easing off, three carriers—rail, air, and bus—fell back on a classic method of bringing in a little more cash to carry some of the overhead. They came up with variations on the old theme of offering tourists special attractions and cut rates to lure them at off-peak times.

Greyhound lines is making passes at the neglected possibility of building winter sports traffic during the midweek. In conjunction with Seattle's Ski Lifts, Inc., it is offering a one-day all-expense outing, Tuesday through Friday, for \$7.50. The project includes:

A round trip from Seattle to Snoqualmie Pass, a resort area in the Cascades 50 miles away; loan of a complete outfit of clothing and boots; choice of skis, snow shoes, toboggan, or bob sled;



Blessed Event

Apropos the Baby Sparkle Plenty-Dick Tracy tie-in (BW—Aug. 16 '47, p57), the Sun Rubber Co., Barberton, Ohio—manufacturer of games and novelties—has introduced "Amos-andra" to coincide with the baby "born" to Amos and Ruby of the Amos 'n' Andy program (CBS). T. W. Smith, Jr. (left) and Bernard McDermott, Sun executives, claim 250,000 dolls have already been sold to stores from sketches alone. Incidentally, CBS (which owns the Amos 'n' Andy show) will get a royalty on each sale.

Watch your weight

if you want
to cut costs!



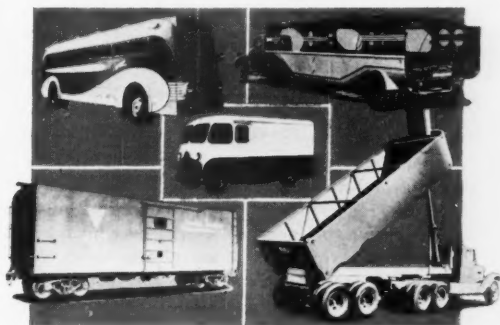
If you are overweight it's a personal matter. But if your equipment weighs more than it should, your business suffers. And that's true whether you're running a railroad, operating a fleet of transcontinental trucks, mining coal, building a highway, or delivering soft drinks.

For remember—every time your equipment moves, or has to be moved, every pound of unnecessary dead weight takes its toll. In extra effort. In more power required. In reduced load-carrying capacity. Parasite poundage is a constant drag on earnings.

That's why it is so important to cut weight in every kind of mobile equipment. And it can be done, cheaply, at practically no increase in cost, with U-S-S High Strength Steels.

With U-S-S COR-TEN or U-S-S MAN-TEN—stronger, tougher, more durable, low-cost "steels that do more"—you can turn dead weight into dollars. By using these superior steels in lighter sections you can produce equipment that weighs one-fourth less, that costs less to operate, carries more payload, lasts longer and is cheaper to keep up. And because one-fourth less steel is required per unit, you can produce one-third more units from every ton of steel used—make your steel supply go one-third further!

Our engineers who have helped industry lift the drag of dead weight from literally hundreds of thousands of mobile units of all kinds will be glad to assist you in applying U-S-S High Strength Steels to your designs.



AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES, CLEVELAND, OHIO • CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO • NATIONAL TUBE COMPANY, PITTSBURGH • TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST • UNITED STATES STEEL EXPORT COMPANY, NEW YORK



U-S-S HIGH STRENGTH STEELS

U-S-S COR-TEN • U-S-S MAN-TEN • U-S-S ABRASION RESISTING • U-S-S MANGANESE-NICKEL-COPPER

9-397

UNITED STATES STEEL

WHEN INDUSTRIAL TRUCKS ARE

Battery-Powered

UNIT-LOAD SAVINGS ARE GREATEST!



HIGH-TIERING with clean, safe battery power in this wholesale grocery warehouse doubled effective storage space, released valuable space for other purposes. Here, one hundred 25-pound sacks of flour, made up as a pallet-load, move as a unit into surplus and from there to the order selection line.

CLEAN, SAFE, COOL—the electric truck features that appeal strongly to another user handling foodstuffs—this time, a canned soup manufacturer. Plant officials say they selected battery-powered equipment because "it is fume-free, presents a minimum of fire hazard and gives off no heat in 'constant temperature' rooms".



Throughout production and distribution, battery-powered industrial trucks assure unit-load handling most dependably, most efficiently—at lowest cost per ton handled. Thus America's top industries, with years of owning and comparing, favor electric industrial trucks over all other kinds.

Unit-load savings are industry-wide. Both you and your supplier profit, for instance, when you specify unit-load packing. You save again through unit-load handling in your own operations. Then you and your consignee profit when you ship in unit loads.

Put this new formula to work. Specify unit loads to your plant . . . in your plant . . . from your plant. And for greatest efficiency in your own industrial trucking, specify battery power.

THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION

29-28G Forty-first Avenue, Queens Plaza, Long Island City 1, N. Y.



ASK FOR the 56-page Material-Handling Handbook, now in its fifth printing, a popular and reliable guide to Unit-Load Methods. It's free.

hot lunch; choice of an all-day pass on ski lift, or an hour of free ski instruction.

Greyhound is directing its offer mainly to tourists. But it has others in mind, too—people who want to sample winter sports before buying expensive equipment or who take days off in the middle of the week.

The New Haven Railroad will run an experimental round-trip Show Train from Connecticut on Mar. 1 to bring suburbanite theatergoers to Broadway. Railroad ticket windows will become box offices for "The Silver Whistle." The Theater Guild has put 500 tickets at disposal of the New Haven, which will sell them at regular prices. But Show Train tickets cost 25% less than regular round-trip fares.

The special train will leave New Haven at 5:35 p.m., pick up an expected 500 theatergoers at six stops. Passengers will have time to dine before curtain time. Regular commuters can take in the play, and go home aboard the Show Train on their commutation books.

Return trip starts at 11:45 p.m. A refreshment car will serve a \$1 midnight snack. If the first Show Train pays off, they will be put on for other Broadway shows once or twice a month.

Colonial Airlines and U. S. Camera Magazine have cooked up a 12-day all-expense camera tour of Bermuda beginning March 5th. Cost: \$455.

For the first six days, the shutterbugs will stay at The Bermudiana and photograph one side of the island; then they will move over to The St. George and shoot the other half. Upon return to the U. S., they're eligible to try for \$1,000 worth of photographic equipment in a photo contest.

CONVERTERS GET A CODE

The Federal Trade Commission is well accustomed to the abuse it often gets from business groups. Last week, however, FTC got an accolade instead. The textile industry cheered the trade-practice code FTC worked out for rayon, nylon, and silk converters.

Actually, FTC wasn't too surprised. Textile Distributors Institute, which represents a large segment of the converting industry, has consistently pressed for order in the trade.

T.D.I. members were particularly pleased with the rules condemning contract repudiation and calling for written sales contracts. But they wished that these two points had been in the Group One set of rules (enforceable by law) instead of in Group Two (not actually enforceable). Nevertheless, they consider inclusion even in Group Two as moral support by the government.

Group One rules prohibit misrepresentations of products, misbranding, false invoicing, trademark imitations.



Your **WORLD MARKETPLACE...**

Canadian International Trade Fair

**MAY 30—JUNE 10, 1949,
TORONTO, CANADA**

You can accomplish all the results of a round-the-world business trip in a single visit to the Canadian International Trade Fair.

All the products or equipment which you need in your business are on display—and for sale—from every quarter of the globe. Every exhibit is conveniently grouped according to trade classification, regardless of country of origin.

You can compare the goods of many countries and complete immediate transactions with your next-door neighbour or a nation on the other side of the world.

Plan now to attend. For full particulars consult any of the following Canadian Trade Representatives in the United States:

Washington—Commercial Counsellor, Canadian Embassy.

New York City—Canadian Government Trade Commissioner, Rockefeller Centre. **Detroit**—Consul of Canada,

Canadian Consulate, Penobscot Building. **Chicago**—Consul-General of Canada, Chicago Daily News Building.

Los Angeles—Canadian Government Trade Commissioner, Associated Realty Building. **San Francisco**—Consul-General of Canada, Kohl Building.

Or write direct to: **THE ADMINISTRATOR,
Canadian International Trade Fair,
Toronto, Canada**

**DEDICATED TO THE PROMOTION OF INTERNATIONAL TRADE BY THE
GOVERNMENT OF CANADA**



INTERESTING FACTS ABOUT THE CANADIAN INTERNATIONAL TRADE FAIR

Businessmen from over 70 countries visited the 1948 Fair. More than 1400 exhibits displayed the products of 28 different nations.

The Trade Fair site contains the largest permanent exhibition buildings in the world.

Canada is the host—but the Trade Fair belongs to the businessmen and traders of every nation.

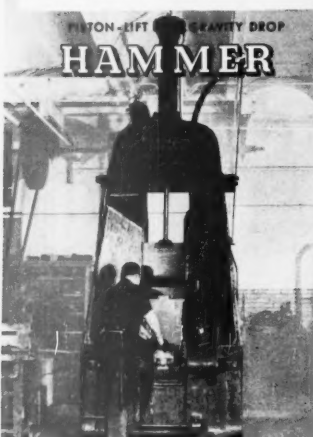
Strictly business is the rule. The general public is admitted only on one Saturday and two Wednesdays during the Fair.

The area of the Trade Fair is a Free Port, enabling exhibitors to store adequate quantities of sample goods on the premises in bond.

Many special personal services, including guides, interpreters and stenographic facilities, are available to visitors from abroad.

**CHAMBERSBURG
CECO-DROP**
PATENTED • PATS. PENDING

**PISTON-LIFT GRAVITY DROP
HAMMER**



THE NEW PISTON-LIFT GRAVITY DROP HAMMER
**Makes more forgings with
fewer blows • is safer •
costs less to operate**
CHAMBERSBURG ENGINEERING COMPANY
Chambersburg, Pa.

"VULCAN" TYPEWRITER
RIBBONS ARE REALLY
ECONOMICAL!

I KNOW!
THEY'RE MADE BY
ROYTYPE!

Your letters are given a finer, clearer appearance—with Vulcan typewriter ribbons.

That's because the Vulcan fabric is thinner, more sensitive—giving a truer impression of the type face!

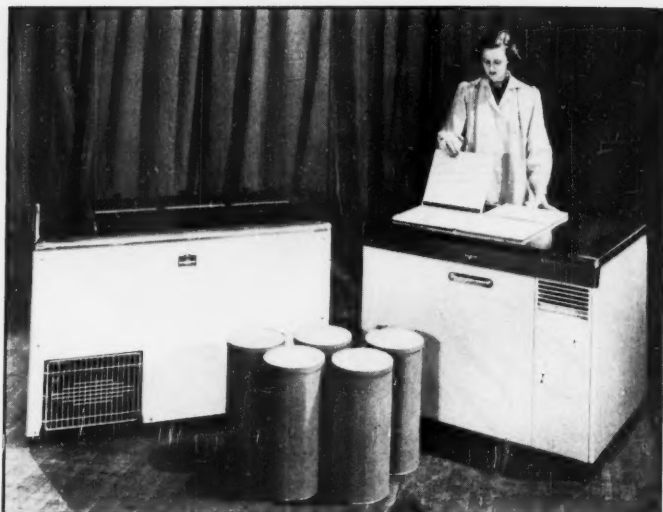
This fabric is stronger, too—meaning greater endurance, longer service.

For appearance' sake—and for economy—supply your typists with Vulcan Ribbons!

Made by Roytype, division of Royal Typewriter Company, Inc.—world's largest manufacturer of typewriters.



THERE'S A ROYTYPE PRODUCT FOR
EVERY BUSINESS MACHINE NEED!



FRIGIDAIRE'S new ice-cream cabinet for commercial use (right) isn't as big as last year's model (left). But it holds just as many ice-cream containers

Smaller Market, Smaller Box

The slump in ice cream has hit cabinet sales. To lure more of this dwindling market, Frigidaire has streamlined its new models to get a size and price advantage.

Manufacturers of commercial ice-cream storage cabinets are worried. Ice-cream consumption has been melting away since 1946, when 714-million gal. were produced. By the end of last year, production had slipped to 569-million gal. This has meant a corresponding drop in cabinet sales.

To get a bigger percentage scoop of the dwindling business, General Motors' Frigidaire Division last week began to tempt customers with a new line that features more storage space for less money. It's of modern design (picture, above) by industrial designer Raymond Loewy. At the same time, Frigidaire wound up a series of preview meetings for ice-cream manufacturers.

• **Improved Design**—Frigidaire's new four-hole double-row cabinet will hold 25 gal. of bulk ice cream. Last year it took a larger six-hole double-row model—costing about 16% more than this year's cabinet—to hold the same amount. Frigidaire achieved this by putting the freezing mechanism under the box. Last year's models had the condensing unit inside the box; this took up space.

The new line has also been designed to keep Frigidaire's production costs down. Frigidaire's new home-freezer units use the same chassis and condenser as the ice-cream cabinets. Thus, by changing tops; making a few other

minor changes, Frigidaire can produce either.

• **Sales Drive**—More than 2,500 ice-cream manufacturers, serving over half the nation's 500,000 ice-cream retailers, have viewed the new line. The manufacturers are the people Frigidaire wants to get to: They buy the cabinets, lend them to franchised retailers.

Salesmen are now using scale-model cabinets, miniature 5-gal. cans, baskets, and dividers, for desk-top demonstrations in a personal-contact campaign. In addition, some Frigidaire sales branches are taking full-sized cabinets to the customer in special trucks. (Frigidaire salesmen have been undergoing a company-sponsored sales training program designed to "resharpen selling ability" for buyers' market.)

• **Main Market**—In 25 years Frigidaire has produced and sold 500,000 ice-cream cabinets. About 90% of its total production has been for ice-cream makers; 10% for hotels, hospitals, and independent grocers. Sales are handled through Frigidaire's 43 wholly owned branches throughout the country.

Actually, Frigidaire had its new line in production late last year. But company officials delayed introducing it until a stockpile could be built up—to handle the orders Frigidaire hopes will come rolling in.

MARKETING BRIEFS

Colored oleo will be sold once again in Michigan now that the legislature has repealed a 48-year-old law banning it from store counters.

Self-service gas stations (BW—Jul. 24 '48, p68) have had a setback in the East. Rochester, N. Y., won't allow them because they're a "distinct fire hazard."

Wallpaper wholesalers face an antitrust suit. The National Wallpaper Wholesalers' Assn. has been indicted for throttling competition in the industry, fixing prices.

Output of gas ranges this year will drop about 500,000 units from 1948's 2.8-million because producers see a return to a normal buyers' market. They're cutting water-heater output, too.

Colgate-Palmolive-Peet will expand its Kansas City (Mo.) operation to include the manufacture of toilet articles. New plant will serve the area between the Mississippi and the Rockies.

Advertising agencies' billings came to \$1.1-billion in 1948, says Advertising Age. J. Walter Thompson led with \$115-million, followed by Young & Rubicam (\$75-million) and B.B.D.&O. (\$72.1-million).

Chocolate bars cost less at wholesale. Last week Hershey cut its price for 24 bars from 80¢ to 75¢; so did Peter Cailler Kohler. Main reason: Cocoa, which cost 53¢ a pound in 1947, now costs only 19¢.

American Dental Trade Assn. and 144 makers and distributors of dental goods have conspired to eliminate competition in their industry, says FTC. The association calls the charges "reckless and unfair."

Decca Records wants \$100,000 damages from New York City's Vim Radio & Sporting Goods Stores because the chain slashed record prices (BW—Jan. 29 '49, p60). Decca charges they were below the prices permitted by New York's fair-trade act.

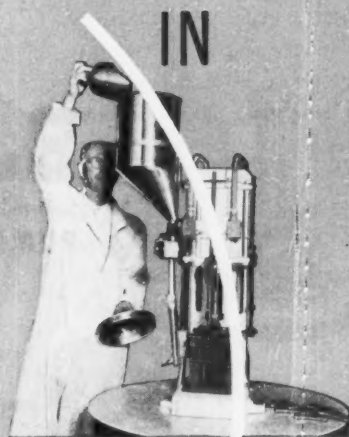
Pepsi Cola will also come in a nickel bottle. It will hold 8 oz. (the 6¢ bottle holds 12 oz.) and is intended for sale at sporting events and similar gatherings.

RCA will use color to build sales in the phonograph-record field. The new 45-r.p.m. records will be pressed from colored vinyl plastic—yellow for children's music, red for classics, etc.

The New Fast-Curing Molding Compound

PLASKON ALKYD

Speeds up production of plastic products and lowers manufacturing costs



1/4" thick plastic form takes from 8 to 12 seconds to cure. Other pieces 3/4" or thicker will take about 50 to 80 seconds. No danger of over-curing; heat resistance of cured Plaskon Alkyd Molding Compound is greater than normal molding temperatures.



...and cured in 8 to 12 seconds!

Plaskon's New Alkyd Molding

Compound cuts curing time from minutes to seconds in many applications... and opens up an entirely fresh approach to high-speed production procedures!

Because Plaskon Alkyd requires less heat, less pressure, and less critical control of curing, molds and molding machines can now be less massive, less expensive, more quickly and easily operated. Plaskon Alkyd molds with surprising ease in small compact dies, installed in fast closing, air- or hydraulic-operated presses... features which mean that manufacturers of plastic products can utilize less expensive equipment, and speed up the production of their molded goods.

Since the new material is designed for electrical and industrial applications, it is available in the functional and color-code shades of brown and black and will be available in red, blue, yellow and green.

SERVICE

The many features of Plaskon® Alkyd Molding Compound may effect unusual economies or developments in your plant. An experienced Plaskon Service Engineer will give you complete technical details and arrange for a demonstration run in your plant. Write or call us today.

ADVANTAGES OF THIS NEW PLASKON ALKYD ARE:

- ULTRA HIGH-SPEED MOLDING
- LOWER MOLDING PRESSURES
- SIMPLER, LESS BULKY MOLDS
- UNEXCELLED ARC RESISTANCE
- LIGHTER, MORE COMPACT PRESSES
- SUPERIOR DIMENSIONAL STABILITY
- HIGH SOLVENT AND CHEMICAL RESISTANCE
- EXCELLENT HEAT RESISTANCE

Reg. U. S. Pat. Off.

PLASKON DIVISION
Libbey-Owens-Ford Glass Co.
2119 Sylvan Avenue, Toledo 6, Ohio
Canadian Agent: Canadian Industries, Ltd., Montreal, P. Q.

Manufacturers of Molding Compounds, Resin Glass, Coating Resins

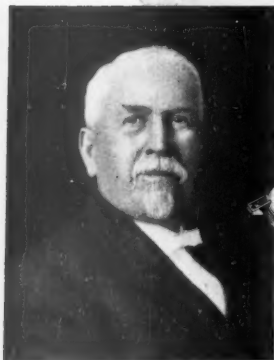
PLASKON
TRADE MARK REGISTERED
ALKYD

**"...the very best advertisement
—a thoroughly good article"**

So wrote the founder of Byron Jackson Co. in 1881, when the firm was nine years young.

And this BJ belief is as strong today as it was then. Since 1872, Byron Jackson has been solving fluid-handling problems for more and more industries throughout the world... making better pumps... growing by making every product its own best advertisement.

Byron Jackson Co. builds and installs every type of centrifugal pump for farm, municipal, and industrial requirements. When you need pumps, specify BJ... write today for illustrated bulletin describing pumps for your industry.



Comparison of the original 1880 model Jackson Patented Vertical Shaft Centrifugal Pump with this new 1949 BJ Deepwell Turbine Pump... one example of the tremendous strides forward in the art of pump-making here at BJ.

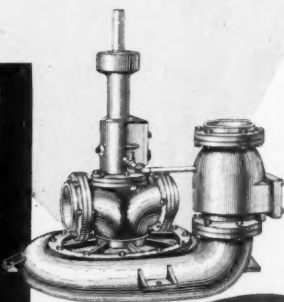
Byron Jackson Co.

Since 1872
LOS ANGELES 54, CALIFORNIA
Offices and Dealers in Principal Cities

Byron Jackson Co. manufactures centrifugal pumps, oil well tools, oil field specialties, and performs many technical oil field services.

Pump Division Oil Tool Division
Patterson-Ballagh Division BJ Service Division

PLANT LOCATIONS
Los Angeles, California
Houston, Texas
Bethlehem, Pennsylvania
Fresno, California



BJ
built-to-last
PUMPS



Moonlit Selling

Life-insurance men ring the bell with an all-night drive. Lonely night workers prove to be good sales prospects.

Life-insurance business is good. All the same, insurance executives are acutely conscious of the fact that their share of the consumer's dollar is definitely on the decline. So they're beating the bushes both night and day for new business.

All-night bush beating, in fact, may be one answer for the insurance salesmen. Of course, selling at home in the evening to a man who has worked all day is nothing new to insurance men. But last week Hugh A. Wedge, educational director of Security Mutual Life Insurance Co., Binghamton, N. Y., released the results of a special dusk-till-dawn campaign in his city with a different twist. His technique was to sell to night workers while they were on the job.

• Modern Paul Reveres—Wedge called his experiment "Operation Paul Re-



Product Tests via TV

If your product stands up under severe stresses, why not test it in front of everybody over television? Executives of U. S. Testing Co. made the proposal when they were guests on CBS's TV program, Vanity Fair. To demonstrate their idea, they tested nylons for durability, girdles for stretch, diapers for absorption. U. S. T. vice-president H. M. Block, surrounded by his testing equipment, supervises the product tests for mistress of ceremonies Dorothy Doan.

Not Every Man in America Can Walk up His Own Front Walk

at Lunchtime . . . Not all of us *have* front walks.

(Only 53% of all American families own their homes—only 59% of the families who read magazines.) But 77 of every 100 *Pathfinder* families own their own front walks—use them to make their homes

home-base for some of today's most progressive, most rewarding living. *Pathfinder's* brilliantly human, neighborly approach to the affairs and men and women of the world has singled out these forceful, fortunate families surely. Where else can you find more than a million such prime prospects for almost anything you have to sell but subway tickets?

444 advertisers and 294 advertising agencies discovered them in 1948—gave *Pathfinder* one of the biggest gains of any magazine. Why don't you find out how it will profit you to have them know you too!



PATHFINDER, *Main Street's* own news magazine.

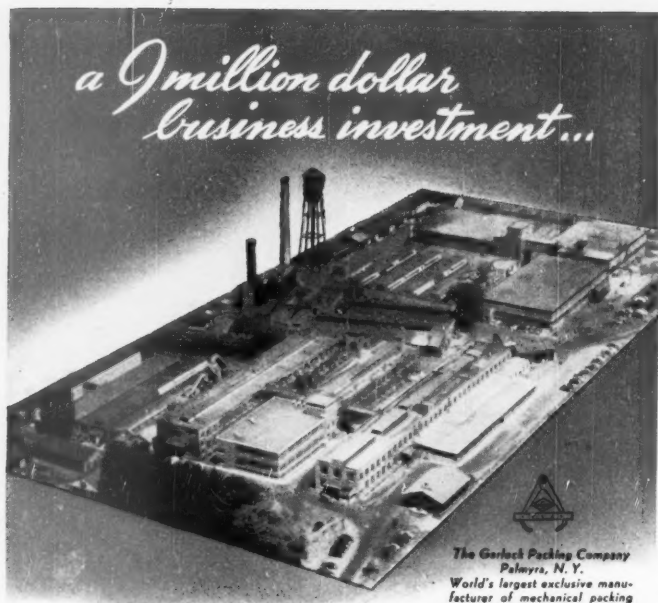
Published by FARM JOURNAL, INC., Philadelphia 5

GRAHAM PATTERSON
President

Next to one other magazine, *Pathfinder* has the largest circulation among substantial people of any news magazine. But *Pathfinder's* thinking, news conscious citizens live where you and most magazines' readers do not—in America's rich, home-centered home towns.



PATHFINDER — HIGH ROAD TO THE FORTUNATE MILLIONS ON MAIN STREET



... "Automatic" Sprinkler protected, of course!

It's not surprising that many leading manufacturers, like The Garlock Packing Company, for example, have found that fire protection by "Automatic Sprinkler" earns dividends in dollars as well as in safety. The first buildings of this multi-structure facility were sprinklered back in 1923 and the initial cost of installation has long since been amortized. Subsequent new construction has also come under the vigilance of "Automatic Sprinkler" protection, an investment in safety that can't be beat.

Like Garlock, your business too, is in a position to realize the money saving advantages of fire protection by "Automatic Sprinkler", and you'll find the following facts worth keeping in mind:

1. Over a half century of background in the design, manufacture, engineering, installation and maintenance of all types of sprinkler equipments, qualifies "Automatic Sprinkler's" leadership in the science of fire protection.
2. "Automatic Sprinkler" devices and systems are designed to the individual requirements of business, commercial and industrial alike, and are approved by all leading insurance authorities.
3. "Talking over" the safety and investment advantages of "Automatic Sprinkler" involves no obligation on your part and surveys and estimates are cheerfully furnished without cost or obligation.

"AUTOMATIC" SPRINKLER CORPORATION OF AMERICA
YOUNGSTOWN 1, OHIO

"Automatic" Sprinkler

FOR INVESTMENT

PROTECTION

DEVELOPMENT · ENGINEERING

MANUFACTURE · INSTALLATION

OFFICES IN PRINCIPAL CITIES OF NORTH AND SOUTH AMERICA



Industrial Plants
Storage - Warehousing
Mercantiles
Piers - Wharves
Aviation Properties
Hospitals - Institutions
Hotels - Apartments
Schools - Colleges
Offices - Public Buildings

"Automatic" FIRE-FOG
provides positive protection
for severe fire hazards

vere." For a task force he selected 29 local agents of various life insurance companies. All those making the test were members of an advanced sales course sponsored by the Life Underwriter Training Council.

The night of the campaign, the sales force gathered for dinner at 6 o'clock. An hour later they began their round of night calls. Their objective: to call on the vast army of night workers in hospitals, hotels, restaurants, utility companies, fire houses, police stations, and similar establishments.

By 6 o'clock the next morning the average agent had worked slightly more than seven hours, made 7.8 calls, held 4.3 interviews. Most important of all, each had sold 2.1 policies averaging just under \$5,000 apiece, and had earned \$110.48 in commissions for the night's work.

• **Surprise**—The sales blitz had only one completely unexpected result. A policeman prospect, after talking to an agent, decided he wanted to sell insurance, too. The next day he applied to the agent's company, got "A" on his aptitude test. Now he's planning to become a full-time agent.

• **Loneliness Pays**—One reason Wedge gives for the success of "Operation Paul Revere" is this: Night workers are generally lonely, so they are more willing than day-time workers to talk with insurance agents.

The Life Underwriter Training Council is so pleased with the success of the experiment that it plans to carry out the night-time prowling this year in other cities where it runs training courses for its salesmen.

SELF-SERVICE FLOWERS

Peter Ball is building up a self-service flower business in the lobbies of New York hospitals. In mid-1947 Ball set up an organization known as Hospital Flowers, Inc., on \$12,000. Last week he released the sales figure for his first full year of operation: \$50,000.

Ball now has displays in 11 hospitals. Visitors make their choice on the way in (\$2.50 for a simple corsage, \$15 for a fancy miniature garden); either they pay the hospital cashier, or simply sign their name and address to the price tag for billing later. Ball says this honor-system, which he set up for the buyer's convenience, has never been violated.

The hospitals get a percentage on Ball's business. Sales average 12 to 15 pieces a day in each hospital; this gives the hospital an added monthly income of several hundred dollars.

Ball handles his business from a distance—he has an allergy to flowers. He also operates Peter Ball, Flowers, to provide the trimmings for other occasions when flowers are customary, such as weddings, banquets.



LONDON and BIRMINGHAM

BRITISH INDUSTRIES FAIR



Britain has long been the world's greatest customer, and has led the way in the export of manufactured products. By initiative in modern research, and from experience of commerce with other nations, her industrial production has become greater and more varied than ever in history.

Renowned for the quality of her work, Britain has applied new technique to her famous industries. By enterprise in fresh markets she has achieved record deliveries, and export production still expands. To keep in touch with these develop-

ments great numbers of the world's principal buyers are making visits to Britain.

Every year, from over 100 countries, trade buyers gather at the British Industries Fair. The Chamber of Commerce in Birmingham, and manufacturers from every part of Britain, join with the British Government to welcome them.

At BIF 1949, from 2-13 May, three thousand exhibitors will display the latest developments in thirty groups of allied trades. The leading men of international commerce are invited to attend the world's greatest assembly of national products.

2-13 MAY 1949

TRADE BUYERS—PLAN YOUR VISIT NOW

Information about exhibitors, special displays and facilities at the Fair can be obtained from the nearest British Embassy, Legation or Consulate.

Luster-on, A FINISH SUPERIOR TO CADMIUM

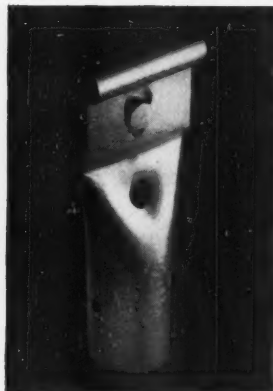
... AT HALF THE COST!

If you are using hard-to-get, over-priced cadmium, you'll be interested in this superior finish... LUSTER-ON on zinc. Better than cadmium for most uses, Luster-on costs about half as much to use and is *always* available. A simple Luster-on cold dip at the end of your plating line gives your product a finish that's permanently chrome-bright, rust and corrosion proofed — that resists handling-smudges and age stains.

CAN YOU TELL WHICH IS WHICH?



Shown here are two unretouched photographs of a Stanley Home Product. One of these has been zinc-plated and Luster-on dipped,



the other has been cadmium plated. Can you tell which one saved money for the manufacturer? (Answer below).

These comparative photographs prove that Luster-on is *equal in looks* to cadmium. General Electric, General Motors, and a long list of other successful users prove that Luster-on is superior to cadmium when you check out final results and costs. You owe it to yourself to look into the one-sided advantages of Luster-on over cadmium... so

MAIL THE COUPON TODAY!

Write for the Luster-on brochure that gives you full information and includes a cost analysis of Luster-on on zinc vs. cadmium. Your finishing superintendent or materials engineer will want to see it, too.



The one at the right is Luster-on dipped.

FREE

this Luster-on booklet with full information and cost analysis of Luster-on vs. cadmium.

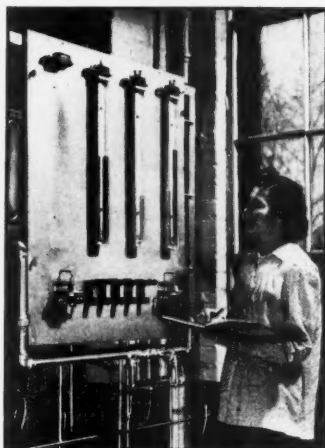
THE Chemical CORPORATION

54 Waltham Avenue, Springfield, Mass.

Send me the Luster-on brochure and cost analysis...

Name
Firm
Address
Title

READERS REPORT:



Those Gages Again

Sirs:

Perhaps Mr. Fritzsche of Fischer & Porter Co. [Readers Report, BW—Jan. 15 '49, p40] has forgotten that fixed-orifice flowmeters use the variation in pressure drop to indicate variation in flow, since his very excellent instrument varies the area of the restriction at a constant (or practically so) pressure loss. This fact makes understandable, too, his "abhorrence" of reading flow rates from pressure gages.

The young lady [above] could very well be reading "flows" in terms of "pressure drops," unless every flow indicator in the plant is a F. & P. Flowrator.

H. EVAN ZEIGER

WEST POINT MFG. CO.,
SHAWMUT, AIA.

• Fact is, the young woman at Pittsburgh Consolidation Coal Co.'s Imperial (Pa.) plant is reading flow—and from a Fischer & Porter Flowrator (at extreme left of picture). The three long gages shown on the board are manometers, which were furnished by Meriam Co. of Cleveland. They were used for a specific purpose, but can, of course, be used to measure pressure or flow. That's the gospel according to Pittsburgh Consolidation.

The Business of Skiing

Sirs:

Your article on the business of skiing was certainly justified [BW—Jan. 22 '49, p24]. I am only sorry that it was not checked by someone with a familiarity with skiing.

The figure of 4-million skiers is undoubtedly high. The National Ski Pa-

trol System believes that best estimates point to one-half this number participating in the sport.

Again, the statement "a beginner is likely to pay at least \$150 for an outfit" is considerably exaggerated. I believe that you will find that any retail ski shop, in New York or elsewhere, will put together a very adequate and complete outfit for the beginner at somewhat under \$100.

The laminated ski was not first developed in this country. Norway preceded us by quite a few years. Your statement that "aluminum skis slip too fast" should produce a smile from any skier. There is no such thing as a ski that slips too fast—in fact, the evolution of skis and their running surfaces is all in the direction of getting one that will "slip faster."

Probably the most glaring inaccuracy in the article is the statement that "New England boasts 320 big, cable lifts." Actually, there are no more than 20 or 21 cable lifts in New England. Probably the author had in mind small rope tows, which are certainly a long way from a big, cable lift, both from the standpoint of installation cost, uphill convenience, and capacity.

A. M. WILLCOX

A. M. WILLCOX & ASSOCIATES,
NEW YORK, N. Y.

• Skiing is so young in this country that no central clearing house for information on such things as the number of skiers in the country, or what they spend, has yet been set up. Our figures had to be based on surveys from our correspondents, and on the experience of active business participants in the sport. It is quite natural that some of our readers' estimates should differ with ours.

The figure of 4-million skiers, for instance, we believe is still on the low side, the National Ski Patrol System estimate notwithstanding. We base this on: (1) an average of the findings of 11 of our correspondents over the country, of whom we asked the question; (2) a survey of newspapers in all of the nation's ski regions made this year by the News Division of American Express Co. (that figure was 4,600,000).

Our statement that a beginner skier is likely to pay at least \$150 for a complete ski outfit is again the result of surveys made by our correspondents across the snow belt. Correspondents found estimates ranging from \$100 to \$200, with the preponderance at the \$150 level. That figure agrees with our check of the major retailers in this city.

As to aluminum skis, our correspondents checked on these specifically with retailers in Seattle, Portland, San Francisco, Salt Lake City, Chicago, Boston, and New York. In every case, they found retailers complaining that the

What I want
is QUIET
—period!

You can get it
with **FIBRETONE***
Ceilings—period!

SEND for the brochure that tells you about noise-quieting Fibretone, "the ceiling with a hundred thousand noise traps"

• Tells how Fibretone acoustical panels, with their ingenious noise traps, help you get rid of irritating, unnecessary noise—noise that reduces personal efficiency in business and industry. Ask for Fibretone brochure. Johns-Manville, Dept. BW-2, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.



J-M Fibretone Ceilings are installed by Johns-Manville and by J-M Approved Acoustical Contractors to assure you the utmost in noise-quieting benefits.



Johns-Manville

A Winning Combination

BROWN LIGHTWEIGHT TRAILERS

MORE PAY FREIGHT AND PROFIT...



BROWN INDEPENDENT DISTRIBUTORS AND DEALERS

Brown believes that selling primarily through independent distributors whose success depends on your success guarantees you a stable local business always at your service.

BROWN lightweight aluminum trailers are distributed primarily through a group of carefully selected, seasoned, independent distributors rather than through factory branches.

BROWN distributors offer you the many advantages of a successful local business — stability, permanence of personnel, knowledge of the area and of customers' needs. They serve but one master — you, the customer.

BROWN distributors offer the profit-minded freight hauler and the fleet owner seeking savings in handling costs, the original, lightweight, frameless, aluminum trailer backed by 25 years experience in the application of light metals. The frameless monocoque construction saves as much as 1/3 in weight yet takes in stride the constant pounding of over-the-road hauling.

BROWN is on the move—more and more profit-minded operators are shifting their fleets to Browns and shifting the weight to payload where it pays off in profits and savings. Your local Brown distributor can prove to you that Brown is today's big bargain in the trailer field. Ask him for the facts.

BROWN TRAILERS, INC.

Box 54, Spokane, Wash. • Box 873, Toledo, Ohio

metal skis just don't move out of their shops. Naturally, the faster the better for the experts. But the skiing public, which makes for big sales, is suspicious of metal skis, retailers said. And they figure that it's because the average week-end skier is queasy about handling the slick aluminum surfaces on hard-packed slopes.

But reader Willcox' obvious experience as a skier has caught us with a couple of Sitzmarks showing. Norway did precede us by six years in the discovery of laminations in ski construction. And, according to the New England Council, the total number of ski lifts of all types in New England now exceeds 300. Only a fraction of these are big cable lifts.

Tote Bins' Advantages

Sirs:

Here are some additional facts about the Tote Bin system of shipping flour [BW—Jan. 1 '49, p24]. General Mills did the experimental work on this system and we were the guinea pigs in the baking industry to try it out.

In the past it has been the custom of bakers to age flour from three to six months. We have found that since using the Tote Bins the aging is not necessary. We have made bread from flour only six hours old and obtained wonderful results. In my opinion it is the most revolutionizing thing that has come to the milling and baking industries in years.

I list the advantages of the Tote Bins:

- (1) A better product with a wheatey flour.
- (2) Sanitation possibilities.
- (3) Economic savings.

The better quality of product with a wheatey flavor perhaps can be compared with fruit or any food that is picked right off the tree or vine, against aged, cold storage, and frozen foods.

The sanitation feature eliminates all possible contamination that might come with any grain, or cotton or paper bags.

The economic savings include hand labor, all the way from the loading of the flour in bags into cars and trucks, to the dumping of the flour into the bins at the bakery. Also, the big saving comes from the investment in large inventories which we carry for about four months in order to age the flour. Also, the Tote Bins save considerable space in the flour storage rooms; this is now cut in half.

We checked our invisible loss for one week and it includes shrinkage of flour in weight by aging, spillage (through torn sacks mostly), loss of flour when dumping it into the bins at the bakery, and flour sticking to the bag.

At our Minneapolis plant this loss ran at an average of approximately 2,500 lb. (over 2%) based on our present volume. The Tote Bin system last



Artist—William Troher, native of Wyoming

WYOMING—annual purchases: \$255 million—mostly packaged.

CONTAINER CORPORATION OF AMERICA



BETTER STEEL FOR BETTER LIVING



*Pouring hot metal in one of the open hearth furnaces at the
Farrell plant of the Sharon Steel Corporation*

Every person — every day — depends on steel in many ways. No other metal is half as important to the people of the world. Steel — like that produced at Sharon — means better living everywhere. STEEL — the magic metal that does so much yet costs so little.



SHARON STEEL CORPORATION

Sharon, Pennsylvania

SUBSIDIARY COMPANIES OF SHARON STEEL CORPORATION: THE NILES ROLLING MILL COMPANY, NILES, O.; DETROIT TUBE AND STEEL COMPANY, DETROIT, MICH.; BRAINARD STEEL COMPANY, WARREN, O.; SHARONSTEEL PRODUCTS COMPANY, DETROIT, MICH., AND FARRELL, PA.; CARPENTERTOWN COAL & COKE CO., MT. PLEASANT, PA.; FAIRMONT COKE WORKS, FAIRMONT, W. VA.; MORGANTOWN COKE WORKS, MORGANTOWN, W. VA.

DISTRICT SALES OFFICES: CHICAGO, ILL., CINCINNATI, O., CLEVELAND, O., DAYTON, O., DETROIT, MICH., INDIANAPOLIS, IND., MILWAUKEE, WIS., NEW YORK, N. Y., PHILADELPHIA, PA., ROCHESTER, N. Y., LOS ANGELES, CALIF., SAN FRANCISCO, CALIF., ST. LOUIS, MO., MONTREAL, QUE., TORONTO, ONT.

week showed an invisible loss of 119 lb., or less than 0.1%. The saving on this invisible loss will more than pay for the rental of the bins. [Tote Engineering, Inc., of Seattle, rents the bins to bakeries at \$6 a month.]

There is no human energy required in handling the bins, which are filled automatically at the mills, right through to the dumping of the flour into the conveyors at the bakery. This work is all done through electric lift trucks and eliminates one man who loads the flour at the mill, one man who unloads it at the bakery, and one man who dumps the flour at the bakery.

These bins are constructed in such a size that they can be placed two in a row in a truck. It takes 28 bins to fill a boxcar, in two rows each of 14 bins.

I am sure other industries, like sugar and starch, will go to this system of packing their products.

HARRY W. ZINSMASER

ZINSMASER BAKING CO.,
MINNEAPOLIS, MINN.



William F. Meredith

A Titanium Pioneer

Sirs:

We have read with great interest your article on "Titanium: New Metal for Industry" [BW—Jan. 8 '49, p. 40]. Having been connected with the titanium industry for the past 18 years, I hope that you will accept my very sincere congratulations on the extraordinarily fine job you have done on the subject. It is gratifying to witness the developments in the technology of titanium, both as applied to the metal and the new uses for the various compounds of titanium.

I should like to submit a constructive comment. The name of the man who



ONE SMALL FACTORY IN 1911



TEN GREAT PLANTS IN 1949

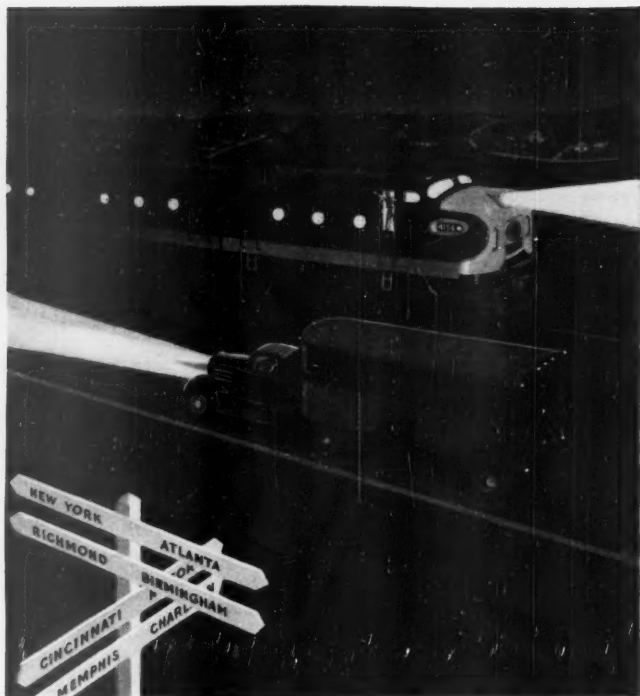
THE STORAGE BATTERY GREW UP WITH GLOBE-UNION

SINCE the days of the "horseless carriage" the name "Globe-Union" has meant quick starting and dependable electric power for automotive vehicles. Just as the horseless carriage owes its development to the great names which are today's leaders in automobile production, so the storage battery, staunch ally of automotive power, has grown up with the great names of battery building. Globe-Union is very proud of its part in storage battery development. Many of the milestones in battery history were also milestones in the progress of Globe-Union . . . the inevitable consequence of the Globe-Union pioneering and research which has helped produce the remarkably efficient storage battery of today.



GLOBE-UNION INC.

Milwaukee 1, Wis. • Atlanta, Ga. • Cincinnati, Ohio • Dallas, Texas
Los Angeles, Cal. • Medford, Mass. • Memphis, Tenn. • Mineral Ridge, Ohio
Oregon City, Oregon • Philadelphia, Penna.



They'll be there in the Morning

North Carolina producers move in every direction to deliver their goods to great consumer markets—and reach them overnight. Nearly 60 per cent of the country's total population lies within a radius of 600 miles, linked to North Carolina by swift and dependable transport over rail, highway, water, and air.

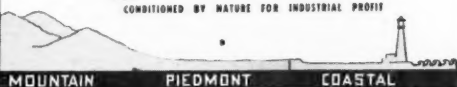
As delivery costs loom more important in business planning, market-wise manufacturers are looking to strategic North Carolina, the ideal location for serving East, North, and the zooming South, fastest growing market in the nation for the past 20 years. During the past decade per capita income in North Carolina has increased over 50 per cent more rapidly than the national average.

Proximity of basic raw materials, year-around mild climate, sound government and tax policies, plus one of the Nation's most abundant supplies of intelligent labor are additional advantages which underwrite lower production costs in North Carolina. For your future plant location, plan strategically—plan North Carolina. Write Div. MI-39 Department of Conservation and Development, Raleigh, N. C., for information covering your own requirements.



Come to
**North
Carolina**

CONDITIONED BY NATURE FOR INDUSTRIAL PROFIT



really had the vision and energy to pursue the development of this element and its compounds was William F. Meredith, president of the Titanium Alloy Manufacturing Co. from 1906 to 1943. His relationship to the titanium industry is comparable to that of Ford to the automobile industry, Dow to the magnesium industry, and Mellon to the aluminum industry.

EDWIN T. GOODRIDGE

PRESIDENT,
HORIZONS, INC.,
PRINCETON, N. J.

• Titanium Alloy Mfg. Co. is now a division of National Lead Co., of which William F. Meredith was a director for many years until his death in 1943. His portrait (picture, page 87) hangs in the offices of National Lead. The Greek beneath it (author unknown) was inscribed by Winthrop Sargent, who heads the Titanium Alloy Mfg. Division of National Lead. He translates it thus: "Titanium was useless before that time when we with our friends, enduring, alas, many hardships, worked it out to be as it now is, a thing of price."

We're Not Stallin'—It's Joe

Sirs:

When I read the opening passages of your article, "From Cold War to Cold Peace?" [BW—Feb. 12 '49, p19], an irrefutable reaction welled up within me and came out in iambic tetrameter:

A MIDDLE-OF-THE-ROADER
STRADDLING THE FENCE
BETWEEN TWO FIRES
OR

IT ALL BOILS DOWN TO THIS:

It may be so . . .
But then it's not.
It could be good . . .
Or not so hot.

You might say this,
But in light of that . . .
You can't be sure,
Just where you're at.

N. A. MACK

WESTPORT, CONN.

• Were but the world
A simple spot
Of Yes and No,
Of cold and hot . . .

We'd publish answers
Firm and clear:
Do this. Do that.
No danger here.

No man would have
To pry and peck
To find the course
His feet should seek . . .

Or need to read
His BUSINESS WEEK!

BUSINESS WEEK • Feb. 26, 1949

1

more work

2

more kinds of work

3

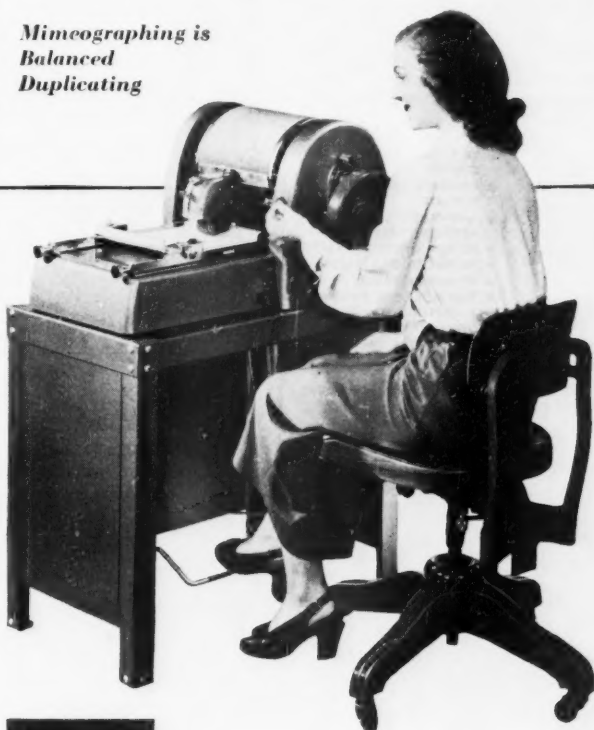
in less time

4

with less effort

In one minute you can have more than 100 clear, sharp, black on white copies of written, typed and drawn material. The new table-top model 435 A. B. Dick mimeograph with built-in motor is engineered for fast production. It is shown here with the model 27 A. B. Dick stand which provides foot control and allows the operator to remain comfortably seated during the entire mimeographing cycle. This machine, for use with all makes of suitable stencil duplicating products, has full Flexamatic Control to handle a variety of paper and card stock in sizes from 3 x 5 inches to 9 x 16 inches. Look in the phone book or write for the name of your nearby A. B. Dick representative and ask for a demonstration. A. B. Dick Company, 720 West Jackson Boulevard, Chicago 6, Illinois.

*Mimeographing is
Balanced
Duplicating*



HERE ARE MORE FEATURES

Easy, fast-loading feed table with 125-sheet capacity. Exclusive Roko-Grip Feed quickly set to feed automatically a great variety of paper and card stocks. Closed cylinder houses semi-automatic ink distribution and recovery system. Three-way copy adjustment. Universal stencil clamp.

UNIVERSAL FEED TABLE

Available at extra cost. Simplifies hand feeding collated sets of irregular sizes of paper and card stocks.

A. B. DICK


the first name in mimeographing

General Controls...



Takes the **MAN**ual out of Controls

with GENERAL CONTROLS *Automatic Pressure, Temperature, Level and Flow Controls* for all kinds of domestic, commercial and industrial applications using all kinds of gases, liquids and air.

It's profitable! Because antiquated automatic or manually operated controls hold down your profits! That's true whether you are a manufacturer, wholesaler, dealer or user.



- "ALL-GAS" CONTROL SYSTEMS
- AIRCRAFT CONTROLS, ELECTRIC
- AUTOMATIC SAFETY SHUT-OFF VALVES
- MOTOR OPERATED VALVES
- MAGNETIC GAS VALVES
- SOLENOID VALVES
- THERMOSTATIC CONTROLS & CONTROL SYSTEMS
- GOVERNOR-TYPE VALVES
- HI-LOW-OFF VALVES
- DIAPHRAGM VALVES
- LIMIT CONTROLS
- ELECTRIC TIME SWITCHES
- REFRIGERATION VALVES
- GAS REGULATORS
- LOW WATER CONTROLS
- STRAINERS, RELAYS
- TRANSFORMERS, SWITCHES
- PORTABLE EQUIPMENT CONTROLS
- MACHINE TOOL CONTROLS

By specifying GENERAL CONTROLS you are assured of *Consistent Performance—Consistent Quality—Consistent Service at a Consistent Fair Price.*

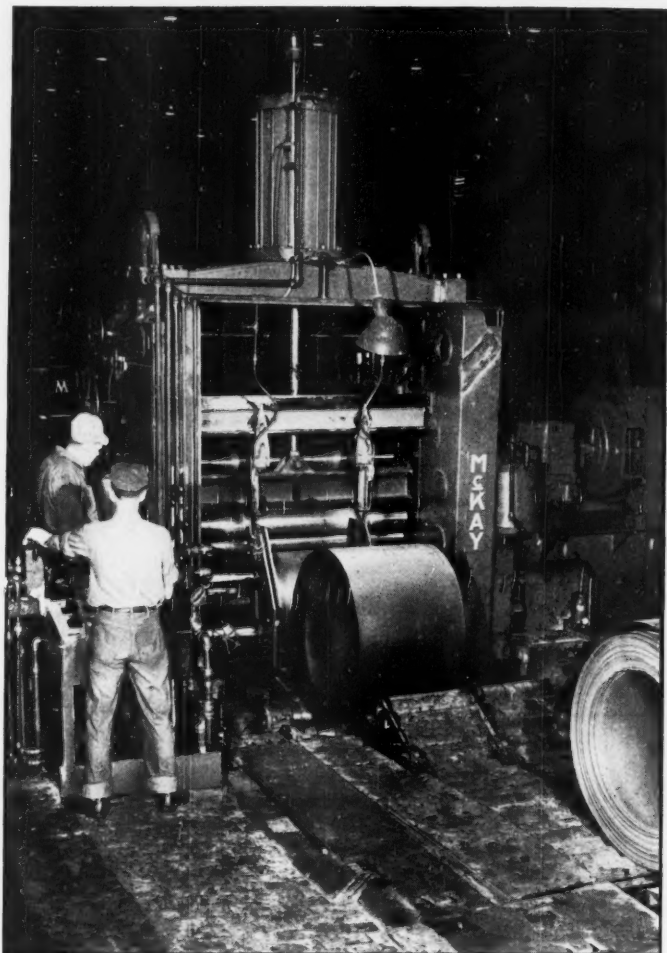


BEHIND THE CONTROLS
YOU BUY

GENERAL CONTROLS

FACTORY BRANCHES: Birmingham (3), Boston (16), Chicago (5), Cleveland (15), Dallas (2), Denver (10), Detroit (8), Glendale (1), Houston (6), Kansas City (2), New York (17), Oklahoma City (1), Philadelphia (40), Pittsburgh (22), Seattle (1), San Francisco (7), St. Louis (12) • **DISTRIBUTORS IN PRINCIPAL CITIES**

CAMERA VISITS INDUSTRY



1 Big coils of hot-rolled strip steel at Weirton Steel Co.'s Weirton (W. Va.) plant are fed through machine which uncoils them before they are sent through pickling bath

How Steel's Face Is Washed

New pickling line at Weirton, which prepares steel for cold-rolling to thin gages, has capacity of 1,500 tons a day.

Steel literally gets its face washed when it passes through one of the high-speed pickling lines at a steel mill. The purpose is to remove from the surface of the plate an oxide scale which is formed during hot rolling. The step prepares steel for further reduction by cold-rolling. (Gages thinner than 0.05 in. cannot be turned out economically by hot-rolling.) The heaviest scale is loosened as the coil is unwound; a dilute

bath of sulphuric acid does the rest.

At Weirton, W. Va., Weirton Steel Co. recently finished installing a new continuous pickling line in its plant. The new No. 1 line replaces an old line of the same number, and supplements two other lines. It has a capacity of 1,500 tons a day.

For the step-by-step story of how the pickling line at Weirton works, turn to page 92.



skyscrapers... by Otis

New Orleans is two cities in one. Visit it during Mardi Gras and you'll find the romance and glamor of ancient France and Spain living again in colorful pageantry. Visit New Orleans in a workaday mood and you'll find "the Hub of the Americas" a hustling, bustling city of commerce. And as you ride high into the Crescent City's modern skyline, remember this: 1,244 of the 1,504 elevator installations are by Otis.

THE NEXT TIME YOU SEE PARIS.

You may possibly be sitting comfortably at home. Worldwide microwave television is being studied by scientists of the International Telephone and Telegraph Corporation in laboratories atop a 300-foot electronic tower at Nutley, N. J. Here again, the vertical transportation is supplied by Otis.

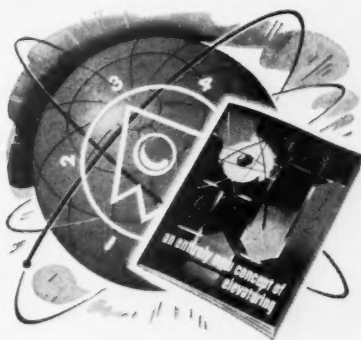


YOUR BUSINESS DAY.

An elevator man clocks your daily routine into 6 definite patterns. At 9, everybody UP to work . . . all morning it's DOWN-UP, UP-DOWN for appointments or snacks . . . 12 mostly DOWN . . . at 1, heavier UP travel . . . all afternoon it's DOWN-UP, UP-DOWN again . . . and then at 5 — swoosh! Everybody OUT . . . after that, it's just the stragglers.

ANOTHER OTIS FIRST.

We've developed the first elevating system ever to be timed to the 6 changing traffic patterns of your entire business day. It's called AUTOTRONIC Traffic-Timed ELEVATORING because its AUTOMATIC and ELECTRONIC features match the services of three or more elevators to all of your traffic demands. It's explained interestingly in a new Otis Booklet. Write for Bulletin B-721-I.



Otis AUTOTRONIC Traffic-Timed ELEVATORING can also be used to increase the efficiency of existing groups of elevators. We'll be glad to tell you how.



ELEVATOR COMPANY

Home Office: 260 11th Ave., New York 1, N. Y.



100,000 Hours on ONE set of belts!

RCA BUILDING, New York, installed 66 Texrope drives over 14 years ago. Some of the original belts are still running.

Texrope drives were chosen for these radio studio fans because they are noiseless and dampen vibration. Also, Texrope multiple V-belts have high safety factor in continuous operation. Performance like this explains why more Texrope industrial V-belt drives are operating than any other kind.

Texrope line includes V-belts, standard and Vari-Pitch sheaves and speed changers. For catalog and drive handbook, see your A-C Dealer or District Office or write direct. Ask for Bulletin 20B6956. Also in Sweet's.

Texrope Super-7 V-belts result from the cooperative research of Allis-Chalmers and B. F. Goodrich; and are sold only by A-C dealers and offices. Texrope and Vari-Pitch are Allis-Chalmers trademarks. A 2642

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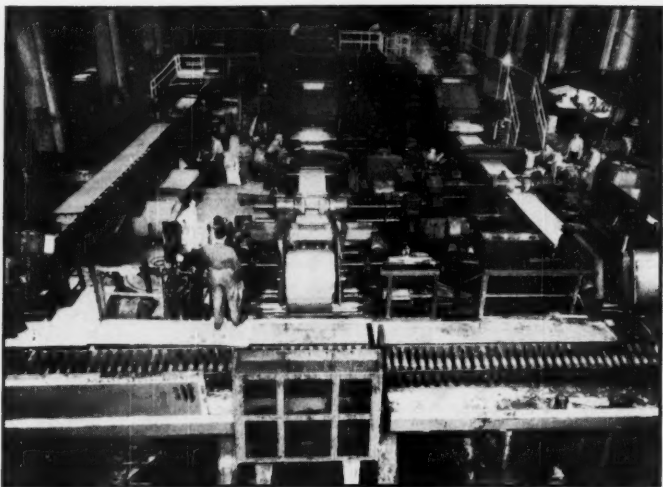
MOTORS — ½ to 25,000 HP and up. Matching Allis-Chalmers Control.

TEXROPE — Belts in all sizes and sections, standard and Vari-Pitch sheaves, speed changers.



PUMPS — Integral motor and coupled types. Sizes and ratings to 2500 GPM.

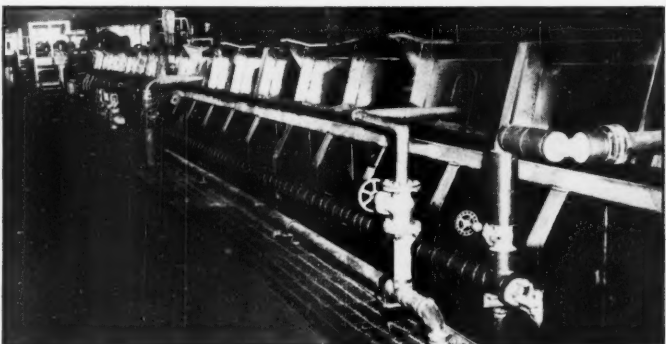
STEEL (continued from page 90)



- 2 Three pickling lines at Weirton plant stretch length of this wing. New No. 1 line at right consists of four acid etch baths, one rinse tank. Baths are heated to 220F



- 3 Upcut shears cut off tip of each strip to insure a square edge for welding. Strip then enters welder which binds front end of strip to rear edge of preceding coil



- 4 There are four pickling tanks like this one. Each 80-ft. x 6-ft. tank contains a dilute bath of sulphuric acid which removes oxide scale (TURN TO PAGE 94)

CHEVROLET



The Styleline De Luxe 2-Door Sedan

CHEVROLET is the only car bringing you all these fine-car advantages at lowest cost!



The Most Beautiful BUY for Styling—A

long, low silhouette! Fleet, flowing lines and contours! Sparkling color harmonies! Tasteful use, instead of over-use, of gleaming chrome!—all these combine to make the new Chevrolet the beauty-leader among today's cars.

Moreover, you'll find it's uniformly beautiful from every point of view, for it has the world's *finest* body—Body by Fisher—exclusive to Chevrolet in its field.



The Most Beautiful BUY for Comfort—Yes, here's all the

comfort of your favorite easy chair at home... with plenty of room to stretch out and relax in the Super-Size interior... and with the advanced heating* and ventilating system of a "car that breathes." (*Heater and defroster units optional at extra cost)



The Most Beautiful BUY for Performance with Economy—You'll experience

outstanding thrills and thrift in this car; for it brings you the world's champion Valve-in-Head engine, with the record of having delivered more miles of satisfaction to more owners than any other power-plant built today!



The Most Beautiful BUY for Roominess—It carries

six full-grown passengers... and an almost unbelievable load of luggage, too... at decidedly lower cost!

The Most Beautiful BUY for Driving and Riding Ease—New Center-Point

Design, a remarkable 4-way engineering advance, including Center-Point Seating—Lower Center of Gravity—Center-Point Steering and Center-Point Rear Suspension brings you an extraordinary new degree of driving ease and Unitized Knee-Action



riding comfort on any and all kinds of roads. Only new Center-Point Design gives these finer motoring results; and only Chevrolet offers new Center-Point Design at lowest cost

The Most Beautiful BUY for Safety—Chevrolet gives

fivefold safety protection found in no other low-priced car: (1) New Certi-Safe Hydraulic Brakes; (2) Extra-Strong Fisher Unisteel Body Construction; (3) New Panoramic Visibility; (4) Safety Plate Glass in windshield and all windows; and (5) the extra-safe Unitized Knee-Action Ride.

Look... Ride... Decide...
it's the most Beautiful BUY of all!



Yes, we suggest that you let your eyes—your driving and riding experience—and your judgment of automotive values inspire you to make the happy decision to choose this thrilling new Chevrolet for '49.

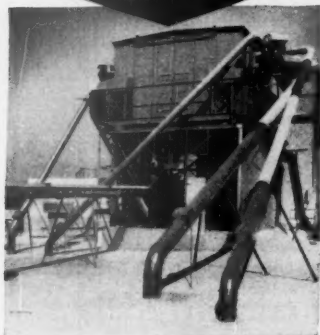
Its outstanding Fisher Body lines and luxury, its world's champion Valve-in-Head performance and economy, its totally new kind of driving and riding ease—all will tell you, unmistakably, here's *the most beautiful buy of all!*

So just visit your nearest Chevrolet dealer's; get the whole wonderful story of the most exciting new car of today; and then you'll know why more people are buying Chevrolets than any other make *this* year; just as they have done during the total 18-year period, 1931 to date!

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

SLY

Pioneers and Leaders
in INDUSTRIAL
DUST CONTROL



Sly Dust Filter on roof of the Quaker Oats plant at Akron, Ohio. Pipes shown carry dust-laden air from grinding apparatus to filter.

10 MILLION BREAKFASTS PER DAY!

That's the oatmeal output at the Akron Quaker Oats factory. Plus hundreds of tons of poultry and livestock feed a day, in addition to thousands of cases of puffed wheat, rice, hominy grits and Aunt Jemima pancake flour.

Dust from this gigantic operation created a nuisance to workers and plant neighbors. Then SLY engineers were asked to take over.

Through the installation of a 27,000 cfm Sly Dust Control System, all of the fine cereal dust is now collected by filtration through cloth. The entire unit is automatic in operation. An electric timer operates cleaning devices, which periodically shake the dust off the filter bags into hoppers, from which it is conveyed to a point of disposal. The system operates continuously.

The Quaker Oats project is typical of thousands of successful, inexpensive SLY installations which prolong the life of machinery, reduce cleaning and maintenance costs, and eliminate health hazards. Ask for Bulletin 98 and tell us your problem so that we can write you fully.

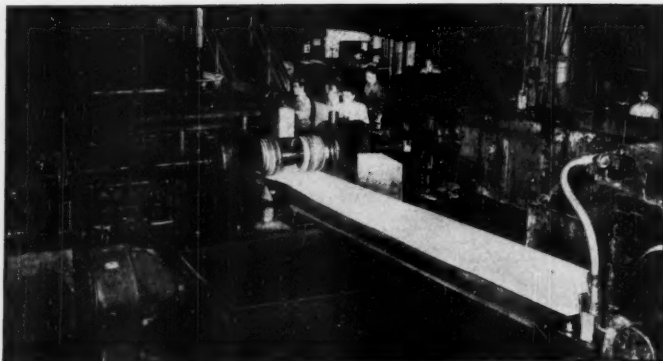


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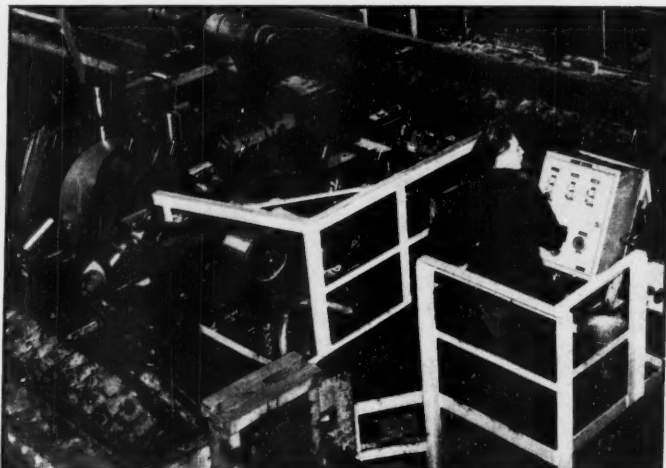
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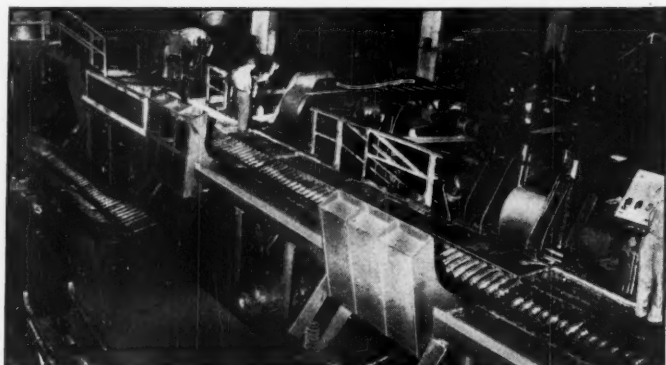
STEEL (continued from page 92)



5 After drying, strip passes through this side trimmer, which cuts it to uniform width. It is then inspected and lightly coated with oil to prevent rusting

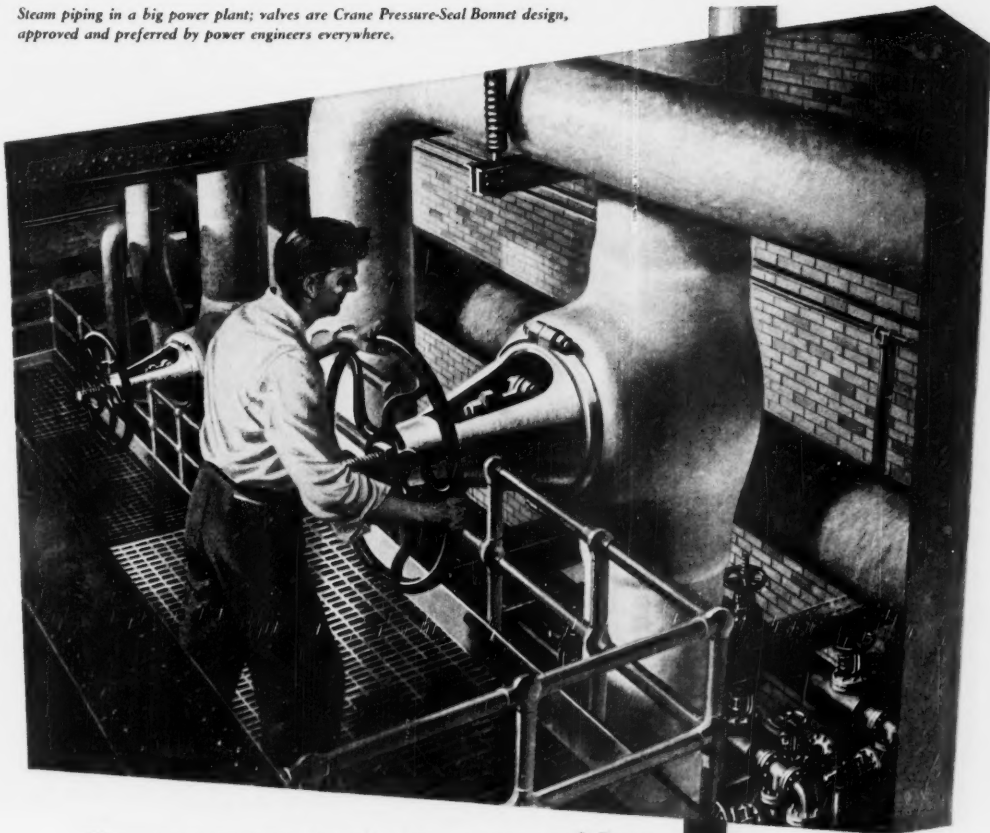


6 At end of strip's trip through pickling line, it is recoiled on upcoiler. Unless double-length coils are wanted, strip is cut again at point where it was welded



7 As coils come off the upcoiler they are rolled onto roller-type conveyors. They are now ready to be transported to cold-roll mill for further reduction.

Steam piping in a big power plant; valves are Crane Pressure-Seal Bonnet design, approved and preferred by power engineers everywhere.



Power men turn to a new idea

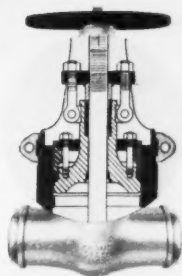
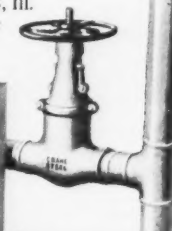
Where steam is harnessed for power generation, there's no greater care given to selection of piping equipment. High-pressure/high-temperature operating conditions permit no compromise with dependability of valves, fittings, and pipe. Thus when power men across the country adopt without reservation a radically new idea in valve design, you know it must be good.

That's exactly what happened in two short years in the case of Crane Pressure-Seal Bonnet Valves. This revolutionary development, among its many new features, completely eliminates bonnet joint leakage and bonnet joint maintenance. Such is the confidence most power men have in piping equipment bearing the name Crane. Such is the confidence any industry can put in piping systems completely Crane-equipped. For in the comprehensive Crane line—down to the smallest item—there's but one standard of quality.

A demonstration can be arranged through your local Crane Branch.

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

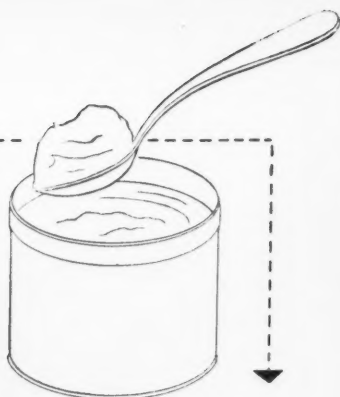
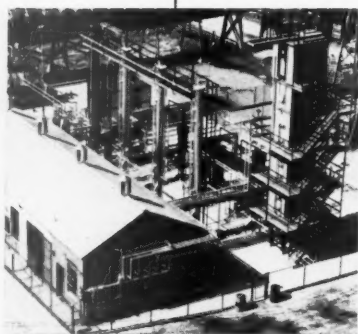
VALVES • FITTINGS • PIPE
PLUMBING and HEATING



Crane Leak-Proof
Pressure-Seal Bonnet Joint

HOW IT OPERATES—Bonnet joint is inside the valve . . . sealed with a wedge-shaped seal ring. Fluid pressure acting against the entire area of bonnet is carried by the lesser area of the seal ring. Because sealing pressure is always many times greater than fluid pressure, leakage is impossible. Literature sent on request.

Everything from CRANE for every piping system



Making
a **GAS**
that's good enough
to **EAT!**

THE **GIRDLER** CORPORATION

Gas Processes DIVISION

LOUISVILLE 1, KENTUCKY

Designers, Engineers, Constructors

Nowadays when Ma bakes cake or luscious doughnuts, some of the credit belongs to the invisible, odorless, tasteless gas called hydrogen. Hydrogenation helps make possible the bland, stabilized qualities so useful to Mrs. America in modern shortenings.

And so, most shortening producers operate hydrogen manufacturing plants. Many of the present plants were put up by Girdler. Practically *all* new hydrogen plants under way for shortening are Girdler HYGIRTOL plants. Employing the Girdler hydrocarbon-steam process, these plants manufacture high-purity hydrogen at lower cost than any other method.

Take a tip from this whether you are in fats and oils, petroleum, chemicals, plastics, or one of a dozen different fields. Girdler's proved, progressive gas process design, engineering, and plant construction services have paved the way to *effectiveness with economy* for industry at large, on problems involving all industrial gases, plus gaseous and liquid hydrocarbons and organic compounds.

If your business involves any gas processes, deal with Girdler for that new plant or improvements in the old. It pays off.

HYGIRTOL is a trade mark of The Girdler Corporation

AUTOMOTIVE



1949 DODGE Coronet has 123½-in. wheelbase, wider seats, more leg room

New Chrysler Line Bows In

Dodge is the first of 1949 models to be unveiled; Plymouth, De Soto, and Chrysler to follow soon. Dodge indicates that Chrysler Corp. styling is much more conservative than competitors'.

The wraps came off the 1949 Dodge this week. It's the first of the new Chrysler models to be unveiled during the next three week ends. And the appearance of the new Dodge makes it plain that: Design-wise, Chrysler is going to be more conservative than General Motors or Ford.

At first glance, the new Dodges closely resemble their immediate forebears. Fenders are treated separately, not blended into bodies. Hoods look much the same as those in the past. Rooflines are higher than in most other current makes.

• **Changed Dimensions**—But actually, outside dimensions have been changed a lot: The 1949 Dodges are lower, shorter, and narrower than previous ones. Nonetheless, inside, there is more head room, leg room, and elbow room than in last year's model.

The 1949 Dodge is built on two wheelbases. The Coronet and Meadowbrook models ride on a 123½-in. wheelbase, an increase of 4 in. A brand new addition to the line is the Wayfarer, in a 115-in. wheelbase. It comes in 2-door sedan, 3-passenger coupe, and roadster versions. The Wayfarer will be Dodge's bid for volume business at lower prices. It will edge toward the price domain

now occupied by Plymouth in the Chrysler setup.

• **Power Plants**—All 1949 Dodges are powered with an L-head, 6-cylinder engine with a compression ratio of 7 to 1. The higher ratio boosts horsepower to 103.

Seats have been moved forward in relation to the rear axle, making for better riding. The front seats of the Coronet and Meadowbrook are six inches wider, and the rear seats nearly eight inches broader, than previously.

• **Question of Looks**—Chrysler designs will help determine just what the public wants in the way of auto looks. Admittedly, the Chrysler cars are easier to get in and out of than the lower-hanging, more streamlined jobs. Too, the bolted-on, separate fenders give promise of lower repair bills.

But such practical aspects, say Chrysler's competitors, are balanced by other considerations. The competitors feel that the public wants super-streamlining. Now both advanced and conservative designs will be available. And since runaway demand for passenger cars has given way to more careful selection, the appearance of the two style trends may help prove which school is more popular.



Why

Take Two

When One Will Do!

Here's the modern, dual-purpose case that holds one suit and a complete change of clothes with enough room left over to carry the contents of any brief bag!

Its outside drop front compartment holds the one suit, without wrinkling, as well as ties and handkerchiefs. Inside of case has two compartments; a large center one which holds a portfolio, as well as other business material, and a second hidden compartment which has ample room for a Dopp-Kit, shirts, and miscellaneous personal items. Unusually lightweight. Rugged steel frame construction. Truly, the gift that makes business trips a pleasure. At better stores, or write for name of nearest dealer.

the amazing

BRIEF-MASTER

Combination One Suiter and Brief Bag



DOPP-KIT

Toilet Case

Holds all necessary toilet articles and accessories. Opens wide, stays open. Closes snug and flat. Waterproof lining. Choice leathers. Look for the "Dopp-Kit" trademark, guarantee of the finest toilet kit.



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CONTINENTAL makes them all and thousands more

Of all the 400,000 varieties of fastenings that literally hold our industries together, Continental makes a large proportion marketed under the famous HOLTITE trade name. Most of them are standard — screws, nuts, and bolts for every use in every industry. Others like the well-known HOLTITE-Sems and HOLTITE-Phillips screws are patented specialties and the famous HOLTITE-Thredlock, Locktite and Tap screws were first designed and produced by Continental. Sometimes a fastening engineered by HOLTITE for one industry finds an unexpected use in another. Often a HOLTITE-Engineered fastening will replace several parts that a manufacturer is using. Why not discuss your fastening requirements with a Continental Sales-Engineer. He will focus on your requirements all the broad industrial-fastening experience and ingenuity of Continental. Remember Continental is constantly improving HOLTITE products, lowering their cost and broadening service.

ENGINEERED FASTENINGS FOR PRODUCT ENGINEERS

A. A typical flat head HOLTITE steel woodscrew. Continental makes a complete range of sizes with either slotted or Phillips heads.

B. Special Phillips "HOLTITE-Thredlock" door hinge screw eliminates lock washers and other locking devices giving improved performance when subjected to vibration.

C. Dial adjusting screw specially designed for bathroom scales. Screw inserted in frame is swaged against square shoulder under head. Completed part engages scale leveling mechanism to allow screw driver adjustment.

D. Beater drive shaft for a home electric mixer. Continental engineered this unusual part and produced it economically by cold heading process. Head end is welded to the beater unit. Knurled section provides grip for motor chuck.

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SCREW COMPANY**

NEW BEDFORD, MASS., U.S.A.



1949

COMMODITIES

Flour Sales Off

Lower bread consumption, and better crops abroad bring slump to the milling industry. Advertising to be used.

World War II did more to fatten up the U.S. flour-milling industry than anything in its history. Hungry markets at home and abroad kept the mills breaking one production record after another. Prices were high, profits good; every piece of milling equipment raced full speed to get in on the boom. The record peak came in 1947, when the industry put out 302-million 100-lb. sacks (prewar production average: 200-million sacks).

• **Slump**—Now the big ride is over: The buyers' market has come back with a vengeance. So prices have plummeted to a point where profits have all but disappeared. Last week flour production in the Southwest was only 32% of capacity.

This shift traces back almost exactly a year—to the break in wheat prices. That put the millers' best customers, the bakers, into a bearish frame of mind. The bakers had been booking their needs for 90 days up till then, but the break led them to pare inventories, begin living virtually on a hand-to-mouth basis.

• **Causes**—The current market shows that the bakers were responding not to a bogey man, but to a hard economic fact. Wheat stocks are greater today than they were a year ago, new acreage sown to winter wheat is at a record high. Meantime bread sales have taken the biggest dive since the end of the war.

Exports have hit the miller as hard as the domestic slump. Both foreign harvests and the foreign milling industry have bounced back from the wartime dumps, and military feeding abroad has dropped. Some Marshall Plan countries are asking for wheat instead of flour—they want the byproduct feed for their animals and the flour-making work for their mills. And U.S. millers are even losing some of their Latin-American markets to aggressive Canadian competition.

• **Severe Effects**—The effect of all this on the mills has been severe. Some of the marginal mills have folded. Others are still struggling to keep their plants going. Even the well-established mills have had to hustle to get business, and are accepting orders at prices that leave them little if any profit. Some smaller mills are even buying flour to fill com-

mitments because it's cheaper than milling the stuff.

This kind of price-cutting will throw red blotches over many a profit picture which has been a pretty sight to millers during the past few years. It means that marginal capacity and inefficient plants will disappear. Larger mills will hedge by extending their operations into new fields, or by expanding lines already started.

• **Campaign**—Meanwhile, the millers are trying to throw up a dike to stem the tide. The dike: a \$2.5-million advertising campaign to sell the public on the virtues of baked goods and other products of flour (BW—Feb. 28 '48, p. 46). But in this campaign they are up against more than a temporary slump. They must also overcome a steady drop in American flour-eating habits. For example: 30 years ago, per-capita flour consumption was 210 lb. a year. Today it stands at a low of 145 lb.

Salmon vs. Power

Washington state enacts law preventing building of dams that would destroy fish. Oregon may do likewise.

Fish interests have won a major battle over power interests in Washington state.

A new state law creates a fish sanctuary on tributaries of the Columbia River below McNary Dam (nearly 300 miles inland). This will prevent the city of Tacoma from building two power dams on the Cowlitz River. The Washington State Dept. of Fisheries says the dams would destroy nearly one-fourth of the total Columbia River salmon runs.

• **Oregon, Too?**—Similar legislation affecting tributaries of the lower Columbia is up in the Oregon legislature. If it passes it will block construction of a power dam by private capital on the Deschutes River near Madras.

Washington's law will force ultimate power developments farther up the Columbia. It also pushes back the day to which the Pacific Northwest may look for relief from the power shortage.

Tacoma was prepared to build the dams at once. The idea was to supplement its other municipal generating facilities and the power it buys from the Northwest power pool (which connects all private, municipal, and federal generation in the Pacific Northwest).

• **350,000 Kw. Lost**—The two dams on the Cowlitz were to generate a total of 350,000 kw.; some power would be available in 1951 and all by 1952—well ahead of the government's bigger project now under way at McNary Dam.



add it up...

Building with "PENTA"-treated wood means:

1. LOWER BUILDING COSTS

Building costs less with PENTA-chlorophenol-treated wood... wood protected from decay and termites. In many instances PENTA-treated wood effectively replaces more costly materials.

2. FEWER MAINTENANCE WORRIES

While the use of PENTA-treated wood doesn't do away with maintenance problems entirely, such wood *does* last two, three and even four times the life of untreated wood.

3. ADDED BUILDING PERMANENCE

PENTA adds permanence to wood's acknowledged versatility, excellent insulating qualities, and easy workability. In addition, PENTA leaves wood clean and easy

to handle... creates no personnel problems.

4. GREATER SALVAGE VALUE FOR WOOD

Wood has salvage value and is relatively easy to dismantle. The "PENTA" treatment makes wood more durable, increases its uses, and definitely adds to wood's salvage value.

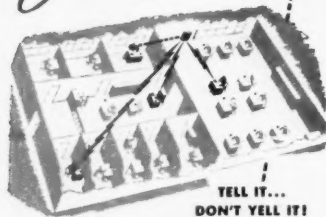
ASK YOUR ARCHITECT AND MAINTENANCE SUPERINTENDENT the next time you build. As experts, they are acquainted with the advantages of PENTA-treated wood! Write to Dow for further information about PENTACHLOROPHENOL. Ask for booklet PE 23.

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FACTS, FIGURES and DECISIONS

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Select-O-Phone is a
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Owning your own inexpensive Select-O-Phone System is like having extra hours added to every working day. The staff spend more time at their desks *working*—less time walking. Facts, figures and decisions flow faster—and the whole business runs smoother.

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You pay no rent. You buy the system outright and let it pay for itself out of savings. Takes 25 to 50 percent of the load off your switchboard. Simple to install.

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Send full information how Select-O-Phone can save money and improve my company's operation.

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COMPANY _____
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FINANCE

Plane Makers Soar Into Black

Sales last year topped \$1-billion, indicating some profit for the industry as a whole. Increase in Army-Navy orders did the trick. Military demand this year will be \$1.7-billion.

The aircraft-manufacturing industry made a profit last year for the first time since the end of the war. Prospects for 1949 indicate that this will be another year in the black with slightly higher operating profits.

Sales for 1948 topped \$1-billion for a new peacetime record (BW—Jan. 8 '49, p. 38). Preliminary survey by the Aircraft Industries Assn. indicated a total sales volume of \$1.1-billion—a 25% increase over the \$848-million in 1947.

• **Mixed Picture**—Although most airframe and engine manufacturers will report some profit for 1948, at least three major firms were still in the red. They were: Consolidated Vultee Aircraft Corp., Glenn L. Martin Co., and Bell Aircraft Corp. On the other hand, Douglas Aircraft Co. felt secure enough last week to declare an extra dividend of \$2.75 in addition to its regular quarterly \$1.25.

Both personal-plane and commercial-transport manufacturing continued to decline during 1948. However, increases in military business more than took up the slack.

In 1949, nearly 90% of sales will undoubtedly be accounted for by Air Force and Navy orders. Military-aircraft sales for 1949 are estimated at \$1.7-billion, with a slight increase in 1950, according to the Bureau of the Budget. Most of these purchases are already taken care of by the \$2.9-billion in contract authorization voted by the 80th Congress last spring. Most manufacturers will be paid on contracts which were authorized last year as they make delivery on completed planes in 1949 and 1950.

• **Military Contracts**—Military airframe deliveries rocketed from 11.5-million lb. in 1947 to 25-million lb. in 1948, although the number of planes manufactured increased only from 2,100 to 2,400. Delivery of more than 50 giant B-36 bombers (130,000 lb. apiece) was the most important factor in the weight increase. Military-airframe deliveries are expected to soar to 37-million lb. by 1950, which is the time when the full effect of the fiscal 1949 budget appropriations will be felt on the production lines.

Present congressional plans would

increase the President's budget for the Air Force by diverting some of the \$800-million now earmarked for Universal Military Training. This will maintain fiscal 1950 procurement appropriations at the record peacetime level set last year. Including a \$435-million slice of UNIT money, the Air Force will have more than \$2-billion for procurement of new aircraft and related equipment. The navy will get \$693-million all told for the same purposes.

• **Commercial Production**—Total aircraft production for 1948 was 10,240 planes, compared with 17,708 in 1947. There was a trend among personal plane manufacturers to shift from inexpensive two-place trainer types to more costly four-place transports. This accounted for the large drop in numbers in the face of increased dollar-volume. Commercial transport production also dropped: from 280 planes during 1947 to 240 in 1948. The backlog of orders for 1949 delivery comes to 140 transports.

State Pay Scales On the Upswing

A lot of states will have to shell out more for their payrolls—in line with the general rise of government costs (BW—Jan. 15 '49, p. 80). In Illinois Gov. Adlai Stevenson has been talking about raises of 10% or more for all state workers. The Oklahoma legislature will consider raising pay scales that have been in effect since Oklahoma became a state in 1907.

In some cases, salaries were written into state constitutions. That means there has to be an amendment before officials can get raises. In Washington, for instance, the governor has been getting \$500 a month for the last 59 years. It wasn't until last fall, that the state's voters gave the legislature power to raise salaries.

In many other states, governors will ask for wage boosts in order to keep workers from drifting to other jobs. Some state officials report that their offices are swamped with work they can't handle because they are understaffed.



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Banking patrons are wooed in many ways at the Flushing National Bank, New York. Little services like these are part of the bank's unusual program to put its business on an informal level. The bank finds they pay off handsomely in customer interest.

BUSINESS WEEK • Feb. 26, 1949

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The finishing touch to a perfect train!

Spectacular Skytop Lounge and private-room sleepers

OLYMPIAN
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Super-speed schedule between

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For a color booklet on the Olympian Hiawatha, write to H. Sengstacken, Passenger Traffic Manager, 903 Union Station, Chicago 6, Illinois.

Crest-to-canyon views of a mountain wonderland from the glass enclosed Skytop Lounge—a new departure in car design. And you'll find the private rooms in The Milwaukee Road's new Olympian Hiawatha sleeping cars perfect in every detail.

NEW BEDROOMS with two beds have enclosed lavatories, ample luggage space, and full length closets. Adjoining bedrooms open into connecting suites for family parties.

NEW ROOMETTES for one offer full privacy with room facilities in compact form. Radio control and circulating ice water in all rooms.

Board the Olympian Hiawatha for a "dream ride" come true.

THE MILWAUKEE ROAD

The friendly Railroad of the friendly West

No Income Tax

Under a wartime formula, life-insurance companies are once again exempt from the federal levy. Snyder objects.

For the second year in a row, life-insurance companies haven't had to pay any federal income tax. That they haven't is no fault of Secretary of the Treasury John W. Snyder, who has never liked the idea.

This week Snyder was once again advising Congress to give "urgent" attention to legislation that would correct the situation. Otherwise, he said, there's a danger the booming life-insurance business will "continue to be exempt indefinitely from federal income taxation."

• **Legal Oddity**—Because of its exemption, the industry doesn't have to pay any federal taxes on the net income from its vast security holdings and other investments. That's quite a saving: Income from these sources has been running around \$1.5-billion annually.

Reason for the exemption, Snyder reports, is a legal oddity. It springs from the automatic application of a complicated formula prescribed in a 1942 act of Congress.

• **Formula**—At that time Congress believed that insurance companies required special tax treatment. It reasoned that policies were written on the basis of certain assumptions—made at the time—about (1) future returns on investments and (2) liabilities to policyholders.

So Congress devised a formula to determine how much of the trade's annual net income from investments was to be left tax-free. This would build up "a credit on account of reserve requirements and other commitments to policyholders."

• **No Alternative**—This formula was first applied to 1942 income. It was determined then that 7% of the life companies' investment return that year was subject to the income tax levy. In some years since up to 8% has been declared taxable. According to the same formula, however, in 1947 and 1948 no part of this income was left to be taxed.

Snyder claims that he can do nothing, for the law gives him "no alternative."

Two Utilities Seek 4,500 Lost Investors

Two companies of the old Insull empire are out looking for 4,500 security holders. The missing investors own \$2.3-million worth of stocks and bonds of Midland Utilities Co. and Midland

United Co. (now Midland Realization Co.), of Chicago.

The Midland companies were reorganized in 1945; holders of various senior securities must turn in their certificates before June 30, 1953, to get anything out of them. But the company can't locate a lot of these investors. It's easy to figure out why: The companies have been through the wringer several times.

Even so, the Midland companies want their books cleared up. They have hired a Hawkshaw to track down their missing security holders. The Hawkshaw is Tracers Co. of America, an outgrowth of Skip Tracers Co. (BW—Jun. 26 '48, p95).

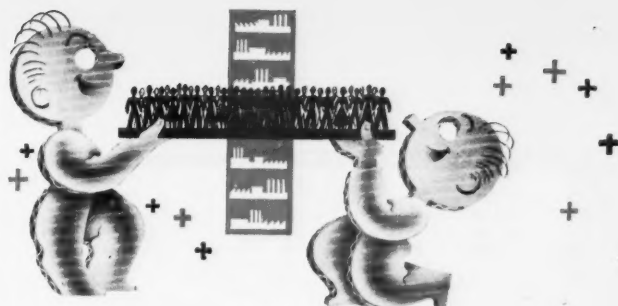
Tracers Co. announced last week it has found 500 owners in one month. Its agents check the last-known addresses of missing investors, are usually able to dig up a neighbor or a local businessman who knows where they moved. If it is learned that a stockholder is dead, Tracers Co. gets in touch with executors or heirs.

These are the securities involved in the roundup: Midland United Co., \$3 convertible preferred stock, series A; Midland Utilities Co., series A 6% debentures; 7% and 6% series, prior lien stock.



World Banker Abroad

The vice-president of the International Bank for Reconstruction & Development is looking North Africa over. Robert L. Garner will spend the next two months there. His purpose: to uncover lending opportunities. Garner's trip is one of a series being made by officers of the Bank. His itinerary includes Morocco, Algeria, Egypt, and the Anglo-Egyptian Sudan.



PEOPLE—THE PLUS IN FORT WAYNE CONTAINER MAKING

When a shipper deals with Fort Wayne, he commands the services of modern plants, mills and machinery integrated to produce his corrugated containers to exact specifications and on time. And he gets still more.

He gets the *plus* in Fort Wayne container making—the people who do the job. He benefits from the skill and proficiency of Fort Wayne technicians, scientists, designers, employees, executives...applying a wealth of specialized knowledge amassed through the 40 years since Fort Wayne pioneered in the industry. Their brains and experience solve his most exacting problems, build into his containers the controlled quality and precise uniformity that result in superior performance. Fort Wayne's a pacemaker in the development and manufacture of corrugated containers. The craftsmanship of its personnel is the plus that puts it out ahead.

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STOKES

Precision Parts by Powdurgy* At Lower Cost

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Now it is a rare day when we don't guide some manufacturer in his choice of presses for powder metal production, or counsel him to avoid it in his current circumstances.

It may pay you to investigate powder metallurgy. Although we do no fabricating of powder metal parts, we shall be pleased to advise on the suitability of this process for your needs. Send your blueprints or sample parts to us.

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Stokes makes Vacuum and Special Processing equipment, High Vacuum Pumps and Gases, Pharmaceutical equipment, Industrial Tabletting and Powder Metal Presses, Plastics Molding Presses, Water Still and Special Machinery.

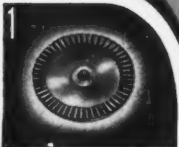
**Stokes' word for the theory and practice of making finished solid products from granular materials.*

4



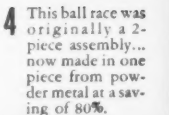
1 This powder metal gear replaces machined forged part at a saving of 25%.

1



2 This contact lug in powder metal replaces swaged and coined part from bar stock at saving of 60%.

4



This ball race was originally a 2-piece assembly... now made in one piece from powder metal at a saving of 80%.

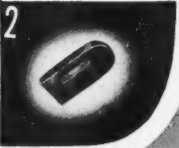
Stokes does not fabricate powder metal parts, but will advise on the suitability of the process for your needs. Send your blueprints or samples.

3



3 This link, formerly stamped and coined, is now produced from metal powder at a saving of 60%.

2



STOKES

KNOWS
HOW



At Nickel Plate's Throttle

Lynne L. White, 58, has taken over as president of the New York, Chicago & St. Louis (Nickel Plate) R.R. A railroadman for 44 years (he started as an office boy on the Rock Island), White fills the post left vacant by the death of John W. Davin. Since last summer he has been executive vice-president of the Nickel Plate and of Wheeling & Lake Erie Ry., which the Nickel Plate controls.

R.K.O. Puts Out Plan To Split Itself in Two

Radio-Keith-Orpheum Corp. last week took the first step toward cutting loose its movie theaters from its production-distribution setup. R.K.O. agreed to the move when it gave up a 10-year antitrust battle with the Dept. of Justice last fall (BW—Nov. 13'48, p. 80).

• **Split Up**—The company is now mailing a reorganization plan to stockholders; they will consider it at a special meeting, Mar. 28. As expected, the plan provides for two new companies to succeed R.K.O. One will inherit the theater assets. The other will take over production-distribution activities.

If the plan is approved, R.K.O. will be dissolved Jan. 31, 1950. That's the expiration date for the option warrants which were issued to stockholders when the company was reorganized ten years ago. Each stockholder will receive one share of the new theater company and one of the picture company.

• **Not for Hughes**—However, one stockholder, Howard Hughes, can't hang onto his new shares long. Hughes owns a controlling interest (24%) in R.K.O. Under the agreement with the Justice Dept., he will have to dispose of his interest in one of the companies.



THE TELETYPE --

and how it Speeds
Freight Service on the M. & St. L.

Teletypewriter Service, modern method of rapid two-way communication, links the many traffic offices of the Minneapolis & St. Louis Railway, located both on its own lines and throughout the country. Only a few railroads have it.

Teletype, as one of its big jobs, provides the fast interchange of information between M. & St. L. offices that is so important in "tracing" consignments of freight for Shippers and Receivers, on the M. & St. L. and on connecting railways, North, South, East, West.

"Tracer Service" is a big factor in the "follow-up" which is a specialty of M. & St. L. traffic men in their endeavor to

provide efficient transportation, complete in detail and constantly improved.

It insures that any Shipper or Receiver can learn quickly, just by asking an M. & St. L. traffic representative, the whereabouts of the freight car that contains



his shipment, whether routed all or only part way via the M. & St. L.; and, most important, when the shipment is going to be delivered.

Modern & Stream-Lined Freight Service—Speeded by Teletype

The **MINNEAPOLIS & ST. LOUIS** *Railway*
TRAFFIC OFFICES IN 36 KEY CITIES

IT'S FIREPROOF!

*that is one of the main reasons
why PC Foamglas is
permanent insulation*



This is FOAMGLAS

The entire strong, rigid block is composed of millions of sealed glass bubbles. They form a continuous structure, so no air, water, vapor or fumes can get into or through the Foamglas block. In those closed glass cells, which contain inert air, lies the secret of the material's permanent insulating efficiency.

● Here's an insulating material that comes in mighty handy when fire strikes. For PC Foamglas does not burn. It acts as a fire retardant, and when installed over combustible materials, actually helps the firemen put out the blaze.

That is one of the main reasons why PC Foamglas is widely known as *permanent insulation*. It is also waterproof and verminproof, hence successfully resists the three main destroyers of insulating materials.

Made of true glass, in cellular form, PC Foamglas has been used successfully for years as insulation in walls, floors,

ceilings and roofs of all sorts of buildings. Our insulating specialists can show you how and where it can meet your individual insulating requirements. Meanwhile, why not send for our authoritative booklets. Just check the coupon and your free copies will be sent promptly.

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Name.....
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City..... State.....



FOAMGLAS INSULATION

When you insulate with FOAMGLAS... you insulate for good!

FINANCE BRIEFS

Beneficial Industrial Loan Co. will soon offer \$20-million new 15-year debentures. Dillon, Read heads the underwriting group.

Consolidated Gas of Baltimore will need "an unprecedented amount of new capital" during next five years—more than \$100-million for expansion.

January fire losses came to \$57.7-million, down 8.1% from the year before. National Board of Fire Underwriters lays it to unseasonal weather in East and South. That has meant less need for forced operation of furnaces, etc.

Kaiser-Frazer Corp. earned about the same last year before taxes (\$19.4-million) as it did the year before (\$19-million). But there was no credit to apply against income tax liability as in 1947. That brings net profits down to \$10.4-million—a drop of 45%.

Fibreboard Products, jointly owned by Crown Zellerbach and Paraffine Companies, has just sold \$25-million 20-year 3½% notes to Metropolitan and Equitable life companies.

A.T. & T. will ask stockholders on Apr. 20 to approve the largest piece of corporate financing in history: sale of \$391-million new convertible debentures to meet additional new-money needs. It's planned to offer them first to A.T. & T.'s 765,000 stockholders on the basis of \$100 of debentures for each six shares owned.

Public Service Electric & Gas may soon sell publicly \$75-million of new bonds to refund some subsidiary debt and finance current huge expansion program.

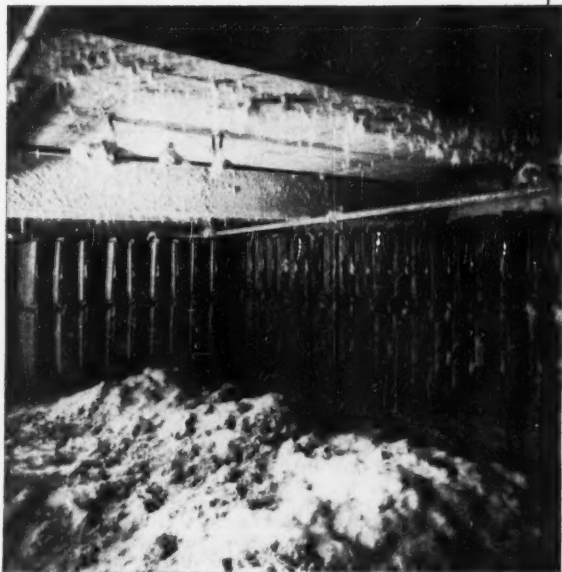
New corporate capital flotations in 1948 added up to \$6.5-billion, SEC reports. Debt securities accounted for 83%, equity issues only 17%. Securities sold to meet new money needs totaled \$5.6-billion. Private placements soared to \$2.5-billion, about \$4-billion more than in 1947.

Life-insurance companies, for the first time in years, experienced a rise in their return on invested reserves in 1948. Equitable's net return jumped to 2.95% from 2.79% in 1947. Metropolitan's 1948 rate edged up to 3.03% from 2.94%.

Armour reports that meat operations in the first quarter of its 1949 fiscal year were "not satisfactory."

LINT ON THE LOOSE

cost this Textile Mill
both dollars and goodwill until....



*AAF Airmat Lint Arrester installed in dust basement
of large textile mill.*

AAF solved the problem with the Airmat Lint Arrester

LINT and dust created by picking and opening machines in this southern cotton mill were exhausted into a conventional settling chamber or dust basement. But the finer particles refused to settle down; found their way up the stack and distributed themselves about the area.

Neighbors complained about the unwelcome lint. Plant management bemoaned high heating costs resulting from fact that lint-laden air had to be exhausted outside rather than recirculated.

American Air Filter engineers recommended the installation of Airmat® Lint Arresters using both Airmat paper and glass fibre mats as the filtering element. Dust-laden air passing through these units is now completely cleaned. Neighbors are happy about the absence of lint—management is pleased over tangible savings resulting from recirculation of heated air.

The wise company initiates dust control rather than waiting for the public to legislate it. Practically every industry creates dust somewhere in its operations. Whether it is visible or of a microscopic size not apparent to the naked eye, trouble is in the making if this irritant is not controlled. AAF engineers will be glad to help you analyze your dust problems. For complete information, see your local AAF representative or write direct to:

AMERICAN AIR FILTER COMPANY, INC.
387 Central Ave., Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.



**ROTO-CLONE®
DUST CONTROL EQUIPMENT**

*Airmat is the trade-mark (Reg. U.S. Pat. Off.)
of the American Air Filter Company, Inc.,
for various air filters, dust collectors and
filtering media.

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Wherever an important story has to be repeated frequently, leading companies are using 16mm. sound films with remarkable success! For selling, training, demonstrating, public relations — the combination of motion, sound and color is powerful and effective.

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giving specifications, prices and full details on the new Ampro Premier-20. Also for free booklet, "A Powerful Aid to Industry," showing how 16mm. sound films can best be used to help solve your problems.

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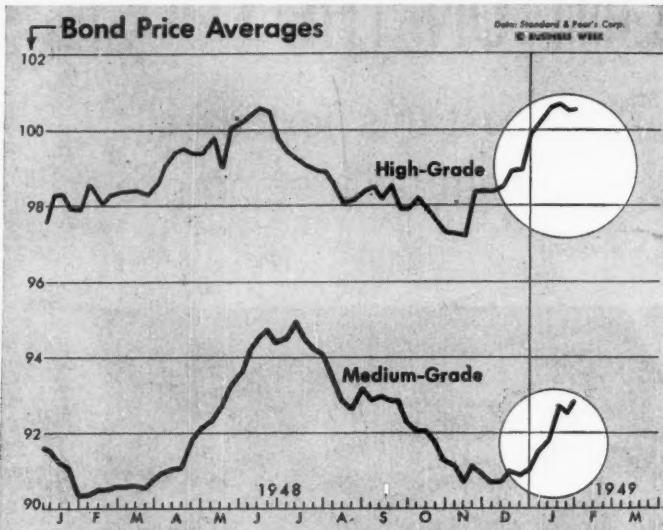
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BW 2-49

THE MARKETS



Bonds Are Up—If They're Good

Firmer tone in government bonds pushes up corporates, but recession fears are holding back the lower-quality issues. Fairly stable market is in prospect.

Corporations that want to borrow money this year can count on a fairly quiet and stable bond market. But they will have to offer well-secured issues. From now on, the quality of an issue is going to be more and more important in determining its price.

• **Downtrend Ends**—The long-term rise in interest rates and the corresponding downtrend in bond prices that began in 1946 seems to be finished now. But this doesn't mean that every individual issue has touched bottom. And it doesn't mean that you can sell a new issue just by putting a price tag on it

and letting the buyers come and get it. Even though prices in general have firmed up, the market is choosier than ever when it comes to particular issues.

• **Two Factors**—Theoretically, the price of corporate bonds is determined by just two elements: (1) the going interest rate on the practically riskless government bonds (the "pure" interest rate), plus (2) an allowance for business risk. But these two components don't always change in the same way at the same time. In fact, they tend to move against each other. The times when money is getting easier (because the demand for loans is lessening) are likely to be the very times when risks are looking greater.

From the middle of 1946 to the middle of 1948, pure interest rates were rising slowly. This put steady downward pressure on bond prices and gave the market a general undertone of weakness.

But since Election Day, pure interest rates have leveled off or even declined a little; the key issues in the government bond market are now selling comfortably above the Federal Reserve support prices (BW—Jan. 29 '49, p. 70).

At the same time, investors have been getting uneasy about business

Security Price Averages

	Week This	Week Ago	Month Ago	Year Ago
Stocks				
Industrial	144.8	143.9	151.1	137.3
Railroad	39.9	40.0	43.3	41.4
Utility	69.7	68.9	69.4	64.6
Bonds				
Industrial	97.0	97.1	97.0	94.4
Railroad	85.9	86.1	87.6	82.1
Utility	95.1	94.9	93.8	96.0

Data: Standard & Poor's Corp.

prospects. They feel they need a bigger allowance to cover risks.

• **Two Responses**—You can see the effects of both these trends in today's bond market. Corporate bond prices have had a significant rally. But the high-grades, which carry the least risk, have done far better than the medium- and low-grade issues.

Brokers and investment counselors are now urging clients to weed out the medium-grade bonds in their portfolios and trade up into better-secured issues. This switching is a sort of depression-insurance. High-grades often go up

during a business slump, because idle money takes refuge in them. Medium- and low-grades go down, because the risks of default become more threatening.

• **Overpriced?**—Some traders think the high-grades are overpriced in the present market. They argue that there should be a bigger difference between the best corporate issues and comparable government bonds. If they are right, the high-grades may back down a bit in coming weeks. But in that case, the medium- and low-grades would spill off even more.

Preferred Stocks: Postelection Box Score

Dismal as the market has been since Election Day, it does show one fairly bright spot: preferred stocks.

Even so, the preferred stocks' postelection action hasn't been spectacular. You can see in the tabulation below that: (1) The best price performers have made only moderate gains; and (2) there are still a lot of issues scattered through the list that haven't gone along with the trend.

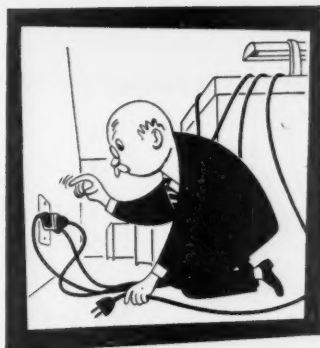
The over-all performance, though, stands out in contrast to that of

the rest of the market. By Standard & Poor's yardsticks, preferreds generally are now 5.7% above the level just before Election Day; against this, industrial commons are down 11%, utility commons are off 5%, and the rail-common group is down 18.4%.

Anybody in the stock market would be smart to watch the preferreds—not just those who own them. A firm market in bonds (page 108) followed by firmness in preferreds often forecasts a rise in common stocks.

Issue and Dividend Rate	1946 Bull Market High	1948 Pre-Election Level*	% Drop From 1946 High	Recent Price*	% Change Since Election Day
American Bank Note \$3.....	\$88.50	\$61.00	31.8%	\$65.37	+5.2%
American Can 7%.....	210.50	163.50	22.3	175.50	+7.3
American Car & Foundry.....	132.50	90.00	32.1	77.00	-14.4
American Sugar 7%.....	158.00	125.00	20.9	124.00	-0.8
American Tobacco 6%.....	174.00	133.00	23.6	140.50	+5.6
Atchafalpa, Topeka & Santa Fe 5%.....	125.00	102.50	18.0	100.50	-1.9
Atlantic Refining 3 3/4%.....	110.00	93.75	14.8	97.12	+3.6
Beatrice Foods 3 1/4%.....	118.75	83.37	29.8	87.25	+4.7
Bethlehem Steel 7%.....	168.00	135.00	19.3	133.00	-1.5
Canada Dry \$4.25.....	147.00	104.75	28.7	107.50	+2.6
Colgate-Palmolive-Peet \$3.50.....	110.00	89.00	19.0	92.00	+3.4
Commercial Credit \$3.00.....	123.00	96.50	21.1	98.00	+1.6
Corn Products Refining 7%.....	210.25	166.00	21.0	178.00	+7.2
Corning Glass \$3.50.....	109.75	89.00	18.2	98.50	+10.7
Crown Zellerbach \$4.....	150.00	100.00	33.3	94.00	-6.0
Deere & Co. \$1.40.....	42.25	31.50	25.4	32.50	+3.1
Dow Chemical \$4.....	118.00	100.00	15.3	103.00	+3.0
Eastman Kodak 6%.....	209.00	160.75	23.1	174.00	+8.2
General Cigar 7%.....	182.00	127.00	30.2	137.50	+8.3
Ingersoll-Rand 6%.....	190.00	152.00	20.0	155.00	+2.0
Island Creek Coal \$6.....	163.00	138.00	15.4	143.00	+3.6
Johns-Manville 3 1/4%.....	153.00	112.00	26.8	110.25	-1.6
Liggett & Myers 7%.....	210.50	161.25	23.4	170.50	+5.7
P. Lorillard 7%.....	197.00	144.75	26.5	155.00	+7.1
MacAndrews & Forbes 6%.....	160.00	130.00	18.7	135.00	+3.8
National Biscuit 7%.....	205.25	165.50	19.4	176.00	+6.3
National Lead 7%.....	207.00	165.50	20.0	171.25	+3.5
Phillip Morris 4%.....	112.00	87.50	21.9	89.00	+1.7
R. J. Reynolds Tobacco 3.60%.....	108.75	82.00	23.9	89.50	+9.1
E. R. Squibb \$4.....	116.00	96.00	17.2	100.50	+4.7
Sylvania Electric \$4.....	109.50	82.50	24.7	85.00	+3.0
U. S. Gypsum 7%.....	205.00	171.00	16.6	177.00	+3.5
U. S. Rubber 8%.....	187.00	134.75	27.9	127.00	-5.7
U. S. Smelting & Refining \$3.50.....	89.00	66.75	5.0	69.00	+4.1
U. S. Steel 7%.....	166.00	138.00	16.9	136.00	-1.5

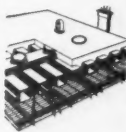
* Actual sale, or bid.



The Office Manager was looking for an outlet

"With all these business machines, the office is as modern as the new look. But every outlet is clogged and a trip to the water-cooler is like skipping rope."

If your building suffers this plight—too many appliances placed too far from outlets—remember this fact: Buildings equipped with Robertson Q-Floors and General Electric Q-Floor Wiring keep pace with modern electrical demand—easily, simply. New outlets can be installed exactly where they're needed, quickly and at low cost.



G-E Q-Floor Wiring and Robertson Q-Floors make an entire floor an electrical distribution system. Every Q-Floor cell is a raceway ready to take additional wiring, and new outlets anywhere, at a moment's notice.

Robertson Q-Floors are manufactured only by the H. H. Robertson Company, Pittsburgh, Pa. For information, contact any H. H. Robertson or General Electric Construction Materials district office—or mail the coupon below and we'll send you complete details on General Electric Q-Floor Wiring Systems.

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G-E Q-Floor Wiring

GENERAL ELECTRIC

"Give us the tools..."

McGraw-Hill Surveys BUSINESS NEEDS

If it can get the money American industry in 1949 will go full steam ahead with a vitally-needed program of improving its facilities. This program since V-J Day has kept business expanding and has made belated headway in modernizing industry.

Furthermore, if it can get the money American industry will carry on for the next five years with its unprecedented program of expenditure for new plant and equipment. Plans already made call for spending about \$55 billion.

These are findings of the McGraw-Hill national survey of "Business Needs for New Plants and Equipment." Major results of the survey, which have been rechecked since election day, are summarized on the following page. They report what American industry is now planning to spend for new plant and equipment. *They do not and cannot show what will be done if the plans are hamstrung by political action.*

In 1949, the survey shows, American industry plans to spend \$14.1 billion for new plants and equipment. That is only about 5% less than was actually spent in 1948.

If these plans are carried out, actual capital expenditures this year may be somewhat larger than they were in 1948. That is because expenditures usually prove to be larger than planned.

Fulfillment of American industry's plans for investment in new plant and equipment this year would no doubt mean a continuation of general prosperity. The record shows that when capital expenditures are high general business thrives.

Even more remarkable than the 1949 prospect is the fact that:

Industry already plans to spend \$41 billion in the years 1950-53 to improve its plants and equipment.

Plans tend to taper off, of course, as they are pushed further into the uncertain future, five years from now. But the striking fact is that plans for expenditures so far ahead are as great as they are. They show American in-

dustry's need for tremendous improvements in its plants and equipment.

Again, let there be no mistake. These survey findings are not a five-year forecast. They report what leading corporations now are planning to do — *if they can get the money.*

But — won't industry be top-heavy with plants and equipment if it carries through any such program?

The answer is clearly — "No".

Here are some of the reasons why not that were disclosed by the McGraw-Hill survey:

First, manufacturing industries are shifting emphasis from expansion to improving efficiency.

They have increased their total capacity 56% since 1939. Their expenditures in 1948 went almost 50-50 for expansion and improvement. But in the next five years they plan to spend three-quarters of their funds to replace and modernize facilities, only one-quarter for expansion.

Second, the prospective rate of expenditure for new plant and equipment is relatively low.

Planned expenditures for new plant and equipment in 1949 represent about 7.5% of the present value of all plant and equipment. That rate of capital expenditure is no higher than the rate during previous periods of prosperity. And industry must overcome years of starvation for new equipment, caused first by the depression of the 30's, then by diversion to war production.

Third, industry is following an extremely cautious policy in buying new equipment.

Three out of four companies report that they will not buy equipment unless it will pay for itself within five years. And a third of the companies report that they expect new equipment to pay for itself within three years. The reason most frequently given for such expectations was that all the money available can be spent on equipment which does pay for itself quickly.

The program of capital expenditure planned by American industry is one of the greatest bargains ever offered to the American people.

To pay for itself in a few years, as equipment must if most companies are to consider buying it, that equipment

continued on next page

WHAT THE SURVEY SHOWS

● HERE ARE THE MAJOR FINDINGS of McGraw-Hill's survey of "Business' Needs for New Plants and Equipment". Rechecked since Election Day, results show what industry is now *planning* to spend for new plants and equipment. They do not forecast what will actually be spent. The survey shows:

1. Industry now plans to spend \$14.1 billion in 1949 — and almost \$41 billion in the four years beyond, 1950-53.
2. Manufacturing industries alone plan to spend \$7.2 billion in 1949. This is 7.5% of the estimated value — \$96 billion — of all manufacturing facilities.
3. Manufacturers estimate conservatively that it would cost \$136 billion to completely replace their facilities with the most modern plants and equipment available.
4. Postwar expansion is virtually complete in most manufacturing lines. Major exceptions: steel and petroleum refining.
5. Expansion programs of railroads, utilities, and oil companies still have two to five years to run.
6. Manufacturing industries have increased their capacity 56% since 1939. But expansion is slowing down. Increase planned in the next five years is only 13%.
7. Efficiency is emphasized more and more in planning new facilities. Manufacturers plan to devote almost three-quarters of their funds to replace and modernize. In 1948, 58% went to increase efficiency this way.
8. Equipment should pay for itself in five years or less, say three out of four manufacturing companies. New buildings, say 77% of them, should pay out in 15 years or less.
9. Profits and reserves are counted on to pay for new buildings and equipment by three out of four manufacturing companies. Some 15% expect to borrow, only 9% plan to sell stock. However, 20% would like to sell stock, only 4% want to borrow.
10. More liberal depreciation allowances for income tax purposes would prompt almost two-thirds of the companies to speed their purchase of new plants and equipment.

● A copy of a complete report on "Business' Needs for New Plants and Equipment" may be obtained by writing me at McGraw-Hill Publishing Co., 330 West 42nd St., New York 18, N. Y.

must promise to produce much better products or make great savings in labor and material. The savings go first to the companies buying the equipment but, as they always have, they soon spread to everyone in the form of better products at lower costs.

Where does industry expect to get the money to buy this bargain for the American people?

Most of the companies covered by the McGraw-Hill survey (76% of the total) count on their own resources — largely profits — to pay for new plant and equipment. About 15% of them expect to borrow money, although only 4% like the idea of getting saddled with fixed debt. Only 9% of the companies expect to sell stock to investors, although twice that many report they wish they could.

What are the chances that business can get the money?

The survey provides no answer to that question. No survey can.

The answer will come from Washington — in what Congress does about taxes on profits and taxes on the millions of Americans who might invest a part of their income in industry's new plants and equipment.

The answer will be found also in the energy and skill shown by investment bankers, particularly in mobilizing the resources of the millions of Americans whose incomes have increased enough since 1940 to make them potential direct investors in industry.

Still another important part of the answer will be given by labor leaders. About half the companies surveyed by McGraw-Hill are holding back on new construction — primarily because of high costs. What organized labor does about wages and productivity can swell or shrink that percentage.

The McGraw-Hill survey leaves no doubt that Ameri-


can industry is fulfilling its responsibility. It is planning the capital improvements needed to make the nation secure, prosperous, and progressive.

But business today lacks confidence and badly needs added incentives. Proper taxation and increased depreciation allowances are vital if we are to open the capital markets to finance industry.

What will happen now depends in large part on what is done in Washington. In his State of the Union message, the President said that "business should plan for steady, vigorous expansion." But in his budget message he proposed new taxes which would divert a substantial share of the money industry is using for expansion and improvement. Moreover, he said nothing about the vital issues now freezing the capital markets.

It is not possible to have it both ways. Fulfillment of the President's tax program means cutting industry's program for new and better equipment. It means slowing down industrial progress. It means delaying the advance toward much higher standards of living tomorrow in order to have a little more government spending today.

I urge you to see that your Representative and your Senator have all the facts on industry's needs for new plant and equipment. What they do to this program will have a decisive bearing on the nation's security and welfare.

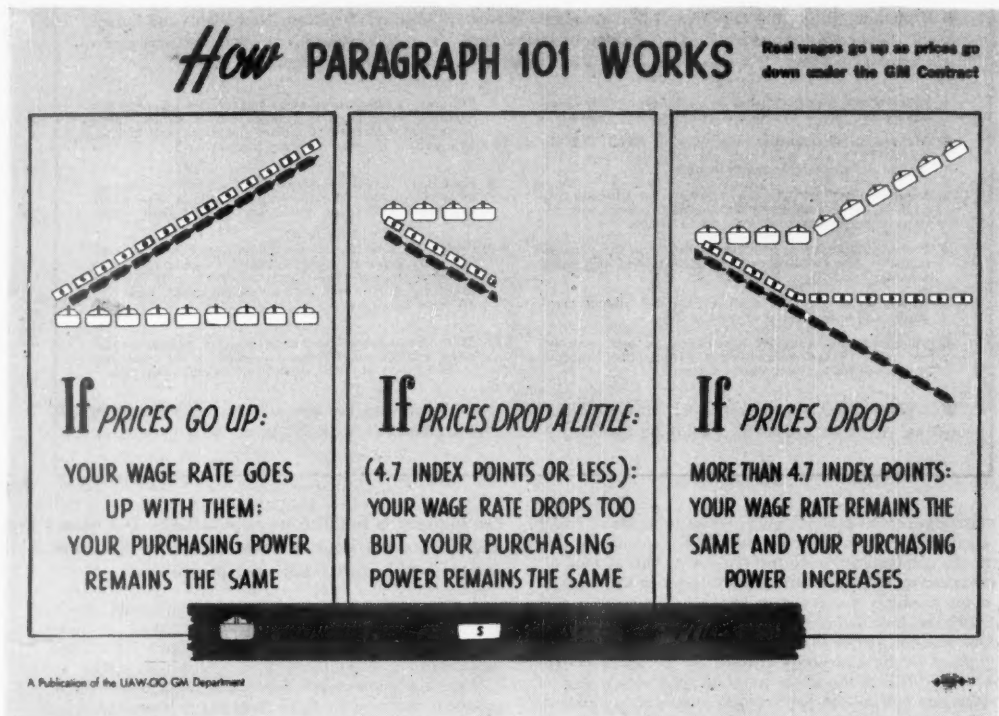


President, McGraw-Hill Publishing Company, Inc.

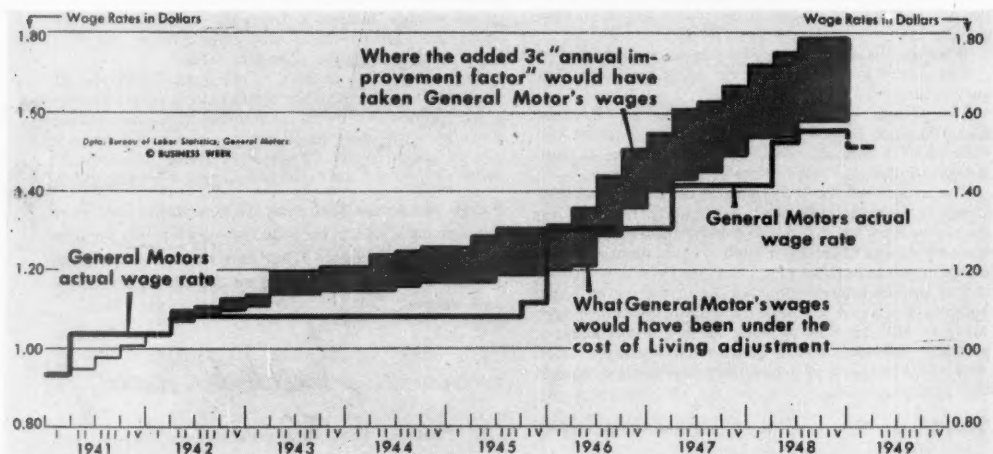
This is the fourth editorial of a special series on industry's needs for new plants and equipment — and what these needs mean to all Americans.

LABOR

U.A.W. Propagandizes—to Defend Its First



UNION-MADE chart seeks to explain General Motors' wage cut based on cost-of-living contract, and to keep members content



IF G.M. CONTRACT had been in effect since 1941: The cost-of-living clause of the contract made in 1948 would have brought hourly base wage rates about to present levels; the "annual improvement factor" of 3¢ a year would have put them 21¢ an hour higher

Wage Cut

For first time since '37 a top-rank employer cuts wages. G.M. contract did it, and union has to defend it.

General Motors' workers will have their wages cut 2¢ an hour next month.

It will be the first hourly wage cut in a dozen years for employees of a major American employer.

• **Following C. of L.**—It results from a drop of 2.7 points in the cost-of-living index since Oct. 15, 1948. The figure for Jan. 15, 1949, announced by the Bureau of Labor Statistics this week (page 114), stands at 170.9. Three months ago it was 173.6. G. M. wages go up or down 1¢ at quarterly intervals for every change of 1.14 points in the index.

This simple arithmetic—which means millions of dollars a year, plus or minus, in one of industry's largest payrolls—is written into G. M.'s contract with two C.I.O. unions. The largest one, the United Auto Workers, represents employees in G. M.'s auto-making plants. The other, the United Electrical, Radio, & Machine Workers, holds bargaining rights in the company's Frigidaire and electrical-manufacturing divisions.

• **The Formula**—In May, 1948, G. M. settled third-round wage negotiations by granting its production workers a raise of 11¢ an hour. But, in one of the most controversial contracts ever drawn, it went further: It provided that in the two years the agreement runs, quarterly adjustments will be made on a cost-of-living formula.

It was this formula which brought G. M. a lot of criticism from business sources. And now it is this self-same formula which makes the first important wage adjustment in 1949 a cut instead of an increase. Its effect on fourth-round bargaining and on industry's 1949 wage bill will be profound. In some quarters the hope is already being expressed that this development will take a lot of steam out of unions' wage-increase drive this year.

The first cost-of-living wage adjustment made under the G. M. contract came last September. It pushed up G. M. wages an additional 3¢ an hour—keeping step with the index, which had moved from 169.3 on Apr. 15 to 173.7 on July 15. The second wage review was based on the index figure for Oct. 15. It stood at 173.6, and because it

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had not moved the necessary 1.14 points, G. M. wages remained unchanged.

• **Turning Point**—October, however, marked a turning point in the direction of the cost-of-living curve. January is the fourth consecutive month in which a decline has been registered.

• **U.A.W.'s Job**—The cutback in G. M. pay will hit almost 250,000 members of U.A.W. It will be the first hourly wage cut they have had since their union was established. Under the circumstances, it is not strange to find that the union, rather than the employer, is "selling" the pay cut.

G. M. has dealt itself out with pleasure, while the U.A.W. "educates" its employees to accept a thinner pay envelope. The union has to meet both expressed and latent criticism for agreeing to such a contract. Its official position is that it was the best possible contract it could win under the adverse bargaining circumstances of 1948; and that it is a good contract by any standard.

• **What Union Sells**—To keep its members sold on the contract, it has been teaching the meaning of "real wages" as opposed to "money wages." As the tables and charts it has been distributing show (page 112, top), the purchasing power of a G. M. employee's pay envelope has not declined. Another thing: Under the contract the employee's purchasing power cannot lag behind while living costs rise; but it can gain when living costs decline. That's because the G. M. agreement provides that the cost-of-living mechanism will not reduce wages more than 5¢ below

the increase given last May, no matter how sharply the cost of living falls.

Still another contract provision that the union capitalizes on is the automatic "annual improvement factor." This binds G. M. to increase wages 3¢ an hour on May 29, 1949, regardless of the c. of l.

• **Contrast**—Although the union's case has an internal logic, it is weakened by this fact: Only G. M. employees face 1949 wage cuts. The G. M. worker is interested not only in his own position; he is also interested in how he stands in relation to employees of the other companies in his industry.

These companies are not in G. M.'s happy spot. Nevertheless, their resistance to fourth-round U.A.W. demands is fortified by conditions at General Motors. G. M., of course, will stand by the terms of the contract, despite an expected union request for revision.

The union, which will open its fourth-round drive on Ford in May, is going to try to ignore what happens at G. M. It will ask Ford for a wage increase, social security provisions, and a \$100-a-month pension—a package that is figured to cost about 30¢ an hour. The normal resistance of Ford—and of Chrysler, which follows Ford to the bargaining table a month later—will be increased by an unwillingness to get wages out of line with G. M.'s.

• **Strike**—Unless the union agrees to take a very modest fourth-round settlement from Ford and Chrysler—which appears unlikely now—the chances are that there will be strikes in the auto industry in 1949.

What's Happening to the Cost of Living

	Food	Clothing	Rent	Gas & Electricity	Other Fuels	Ice	House Furnishings	Misc.	Total Cost of Living
August, 1939	93.5	100.3	104.3	99.0	96.3		100.6	100.0	98.6
January, 1941*	97.8	100.7	105.0	97.4	104.2		100.1	101.9	100.8
January, 1942	116.0	116.1	108.4	96.7	111.8		118.2	108.5	112.0
January, 1943	133.0	126.0	108.0	96.8	117.5		123.8	113.2	120.7
January, 1944	136.1	134.7	108.1	96.0	122.7		128.3	118.4	124.2
January, 1945	137.3	143.0	108.3	95.5	123.6		143.6	123.3	127.1
January, 1946	141.0	149.7	168.3	93.8	127.2		148.8	125.4	129.9
January, 1947	183.8	179.0	108.8	91.9	142.1		179.1	137.1	153.3
January, 1948	209.7	192.1	115.9	93.1	165.0		192.3	146.4	168.8
February	204.7	195.1	116.0	93.2	165.9		193.0	146.4	167.5
March	202.3	196.3	116.3	93.8	166.0		194.9	146.2	166.9
April	207.9	196.4	116.3	93.9	166.7		194.7	147.8	169.3
May	210.9	197.5	116.7	94.1	168.6		193.6	147.5	170.5
June	214.1	196.9	117.0	94.2	180.6	134.2	194.8	147.5	171.7
July	216.8	197.1	117.3	94.4	185.0	136.5	195.9	150.8	173.7
August	216.6	199.7	117.7	94.5	190.1	137.3	196.3	152.4	174.5
September	215.2	201.0	118.5	94.6	191.0	137.6	198.1	152.7	174.5
October	211.5	201.6	118.7	95.4	191.4	137.9	198.8	153.7	173.6
November	207.5	201.4	118.8	95.4	191.6	138.0	198.7	153.9	172.2
December	205.0	200.4	119.5	95.3	191.3	138.4	198.6	154.0	171.4
January, 1949	204.8	196.5	119.7	95.5	191.8	139.0	196.5	154.1	170.9

* Base month NWLB's "Little Steel" formula. † Ice grouped with "other fuels" prior to June, 1948. Data: U. S. Bureau of Labor Statistics; 1935-39 = 100.

Important Questions...

about iron and steel scrap
for every top business man in every industry

Q. How bad is the shortage of scrap?

A. Actually, we have enough scrap to get along, but too much of it is *light* scrap. What is badly needed today is more *heavy* scrap.

Q. Why more heavy scrap?

A. Because heavy scrap will produce *more and better* steel in *less* time.

Q. Why is the heavy scrap shortage so harmful to our economy?

A. Half of all the ingredients that are melted to make steel and castings consists of scrap iron and steel. The short supply of heavy scrap during the past year limited the production of steel mills and foundries. At the present record rate of production, there is still not nearly enough steel to meet the current and anticipated demands of our domestic economy, military requirements, and ERP. More heavy scrap will help bridge the gap.

Q. What's being done about it?

A. A drive . . . and everybody is cooperating . . . is being started for industrial scrap, to (1) help step up present steel production, and (2) *create a visible reserve of heavy scrap in the event of national emergency.*

Q. Why is there a shortage of heavy scrap?

A. Several reasons:

1. Very little of the 123,000,000 tons of steel and steel products exported during the war has come back as scrap.
2. With replacements scarce and expensive, much old equipment which would normally have been junked by now, is still in use.
3. A halt has been called on the junking of old vessels and military equipment which has until recently been a source of scrap.
4. The amount of heavy scrap produced in fabrication—the left-overs of machinery, etc.—is not enough to meet the demand for new steel and castings.

Q. How about the heavy scrap that must exist in huge quantities in Germany and Japan?

A. Some of this will be coming through, but not in good quantities until preparation and transportation facilities within those countries improve.

Q. Where can additional scrap be obtained from domestic sources?

A. From industrial plants which have on hand large amounts of heavy scrap in the form of obsolete machinery, idle equipment—tools, dies, jigs, fixtures, etc.—and unnecessarily large repair parts inventories. Such scrap is the best possible type for the manufacture of quality steel.

Q. Isn't such material ordinarily turned in as scrap?

A. Experience shows that plant "housekeeping" is not particularly good when plant production is high. People are too busy. However, if executives realized the critical situation, they would order the necessary steps to be taken.

Q. How can I help in this drive?

A. Appoint one top official in your plant as a Salvage Director—with full authority to give orders and throw out everything that is not going to be needed. Have him consult with your trade association's Steel Scrap Drive Committee. Call in your local scrap dealer. (Incidentally, the prices paid for scrap are the highest ever.) Promote your scrap drive by meetings of department heads and through plant bulletin boards and newspapers.

Q. How do I benefit from moving scrap in addition to the money received for it?

- A. 1. You get the use of much-needed and expensive floor space now occupied by such equipment and material.
2. You eliminate the cost of keeping records and inventory.

Q. When does the scrap drive start?

A. Right this minute. The very next thing to do after reading this page, should be to start your plant's scrap drive!

Q. What is the goal of this drive?

A. One million tons of heavy scrap . . . and "housecleaning" in your plant will help.



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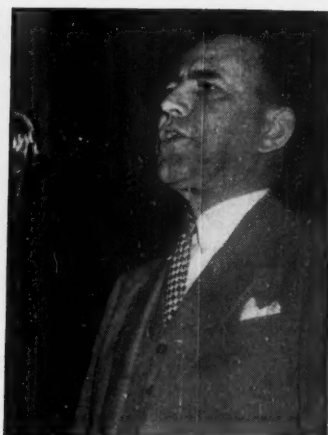
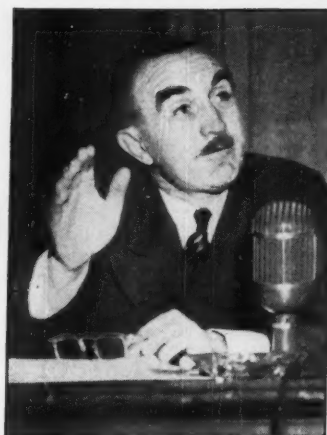
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REPUBLICAN Senators Wayne Morse and Irving Ives have the controlling voice in . . .

Settling Labor Law Terms

Republican liberals swing the balance of power in the Senate, will dictate a law close to the early mild version of the Taft-Hartley act. Administration has lost control.

Two Republican senators will come close to writing the nation's new labor law. Wayne Morse of Oregon and Irving Ives of New York are the men to watch when Congress gets down to voting on revision of the Taft-Hartley act.

Morse and Ives are in a strategic position which will practically let them write the bill the Senate passes. The way things look now, the House will go down the line with the Administration, and, in the end, the Senate will decide what kind of legislation goes to Truman.

• **Blunders**—This peculiar situation results from a pair of tactical blunders by the Democratic majority:

(1) The attempt of the Senate Labor Committee to ram the Thomas bill through at breakneck speed. This angered many a chastened southern Democrat who wanted only time to adjust his pro-Taft-Hartley record to the political realities of Nov. 2.

(2) The decision by Democratic leader Lucas to bring up civil rights and force a southern filibuster early in the session. This is causing schisms in the party that will go deep.

So it's clear already that the Administration won't be able to go as far back toward the provisions of the Wagner act as it wishes.

• **On the Floor**—The Senate Labor Committee will report out the bill the New Dealers want. With the bill on the floor, the situation will be this:

Whenever the Republican minority holds together under Taft's leadership,

enough Democrats will vote with Taft to give him a majority.

But when Morse and Ives pull out of Taft's bloc, a dozen Republicans will follow them—enough to offset Taft's conservative Democratic support.

In either case, the margin of votes is slight. To upset the Democratic majority, the Republicans need to make a net gain of only six votes. (The 54-42 majority the Democrats have on paper is cut by the absence of ailing Sen. Wagner of New York.) There are certainly more than six southern Democrats who will side with Taft in a showdown.

• **Approach**—From that political lineup you can pretty well estimate the sort of bill that will finally come out of Congress. It will follow the Morse-Ives philosophy of what a labor law should be.

Morse says that the Taft-Hartley act is mainly a common-law, court-action measure; he and Ives believe in an administrative approach to settling labor disputes. That is, Taft-Hartley would return labor disputes to the courts; Morse and Ives want the courts used only to enforce administrative decisions.

Point by point, the features of the new law will finally add up like this:

• **Votes for Strikers.** Economic strikers (seeking better wages or working conditions) will be allowed to vote in elections of a bargaining union. The labor board has interpreted T-H to prohibit them from voting; so workers who have filled strikers' jobs have been able to de-

cide an election. Taft has agreed to change this.

Closed Shop. It's agreed that there need be no election among workers to permit bargaining for the union shop. As to the T-H ban on the completely closed shop, Taft is open-minded on a compromise to modify it.

Employer Free Speech. It will be limited to outlaw implied threats as well as direct management coercion. Taft agrees.

NLRB General Counsel. His powers will be cut. Taft has come around to the Morse-Ives view that the general law governing administrative procedure of government boards now provides ample separation of the labor board's prosecution and judicial functions.

Secondary Boycotts. Taft-Hartley bans them; Morse and Ives would permit a secondary boycott when it's in support of a union's economic demands.

Injunctions. Taft-Hartley permits direct injunctive action against unions for damages resulting from secondary boycotts or jurisdictional disputes. Morse and Ives would pick up, instead, the old Wagner act use of the injunction only to enforce labor board orders.

National Emergency Injunctions. Taft wants to keep that weapon for the President; Morse is insistent on dropping it, and Ives is inclined to go along with Morse.

• **Harmony**—Taft, Morse, and Ives accept the fact that what they do is crucial. They are working at the job of sticking together. Inside the Senate Labor Committee, Taft and Morse have joined forces, along with Sen. Aiken, to take advantage of the first-round fumbling of the Democrats.

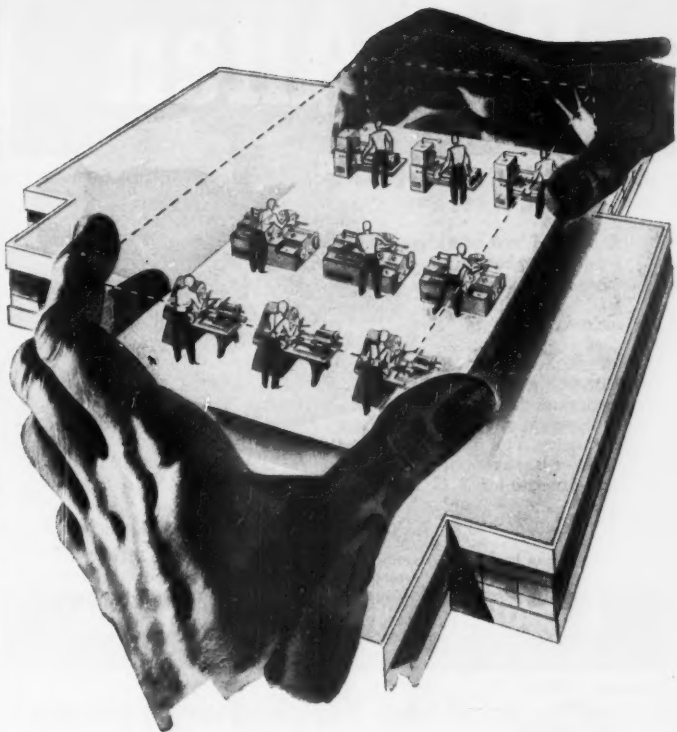
Taft is saying nice things about Morse, whom he had found to be about the hardest man in the Senate to deal with in the past.

Morse is reciprocating. This week he praised Taft's "fairmindedness" on listening to shortcomings of Taft-Hartley, saying: "We are much nearer together on the point of the need for a law less drastic against labor than we were when the law (T-H) was passed."

• **Harkening Back**—What Morse and Ives stand on is substantially the bill the Senate Labor Committee approved in 1947. Actually, that legislation was a Morse-Ives measure until it got to the floor. Taft and then-Sen. Ball won amendments in the Senate, and the House put in still more teeth in conference.

Morse opposed the final version, registering his disapproval with a filibuster. Ives went along with Taft, but only on the ground that as a member of the conference he was obligated to do so.

Now, with the Senate back in Democratic control, Taft does not have enough G.O.P. votes to override Morse and Ives as he could in 1947.



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UNHAPPY STRIKER objects to 8¢ Philadelphia settlement. Will others get . . .

Less Than 8¢?

Mike Quill predicts his Philadelphia settlement of 8¢ "will be big" when industry's fourth-round is history.

Philadelphia's transit system got back to normal this week after a 10-day shutdown (BW—Feb. 19 '49, p. 112). The big issue—fourth-round wages—was compromised with an 8¢ settlement. Many of the 11,000 C.I.O. strikers thought it was too little. But their leader, Michael Quill, predicted that 8¢ "will be big when compared with the fourth-round increases obtained by others."

• **Importance**—For businessmen nationally, the big news in the settlement wasn't the relief it meant for foot-weary Quaker City residents. It was the pattern of the bargaining, and Quill's flat prediction of less-than-8¢ pay hikes.

The Transport Workers Union (C.I.O.) originally asked for 25¢. Successively it scaled the demand down to 20¢, 17¢, and 13¢. Meanwhile, the Philadelphia Transportation Co. stuck to offers of 2¢ and 3¢. The stage was set for a long and tough tieup when the company made a "final offer" of 8¢. Union negotiators, led by Quill, urged its acceptance as "the best [we] can get."

• **Half a Loaf**—Quill called the compromise "half a loaf, or less." But he warned that continuing the strike might be costly: it "might bring [workers] another couple of pennies, but the price would be too great." He pointed out that "employers all over America are

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Profits are Necessary

Profits in 1948 amounted to 8⅞ cents in each dollar of sales. In 1940 they were 9½ cents in each dollar of sales.

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That's why adequate profits—the cake of yeast necessary to make a capitalistic loaf of bread—are so important to the present and future stability of the country and to every man, woman and child in it.

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For 1940 stockholders received \$2¼ million in dividends—about 48% of earnings. For 1948 they received \$6 million which was 39% of earnings.

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Taxes

In 1940 Johns-Manville's taxes were \$4¼ million. In 1948 they were \$12¼ million.

J-M's Annual Statement

Here are the highlights of Johns-Manville's annual statement for the year 1948:*

TOTAL INCOME.....	\$173½ million
For all costs (except as shown below)...	\$ 79¼ million
To employees for salaries & wages....	\$ 66 million
To government for taxes.....	\$ 12¼ million
To stockholders in dividends.....	\$ 6 million
Reinvested in the business.....	\$ 9½ million

EARNINGS AFTER TAXES were \$5.22 per share of common stock.

TAXES were equivalent to \$4.35 per share of common stock.

• • •

We in Johns-Manville are proud of our record of service to the public during our 90 years in business. We pledge our every effort to continue to be alert to the needs of our customers, our employees and our stockholders.

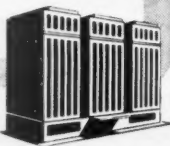
Reverio T. Brown
Chairman of the Board
Johns-Manville Corporation

*Those desiring more complete information should refer to a booklet containing the formal Annual Report to Stockholders which we will be glad to furnish on request. Address: Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.



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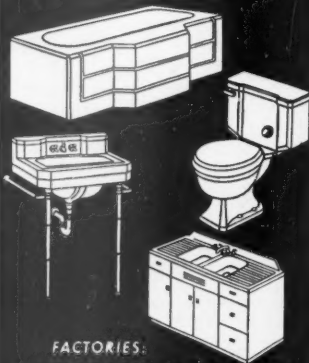
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claiming the cost of living is dropping."

And, he added, "I say \$8 will be big when compared with fourth-round increases obtained by others."

Despite boos and catcalls, a majority of strikers backed Quill, took the \$8 and several "fringe" concessions.

Quill's prediction got a lot of attention. It was the first from a top union leader on the cost of fourth-round pay boosts. The less-than-\$8 figure is low in comparison with union demands as they are now shaping up. And it is below the \$8-to-12¢ range frequently predicted by labor relations men.

• **Causes**—Why the change? That's the question businessmen were mulling over this week. It applies equally to the union's willingness to break off a tight strike at an unpopular settlement figure, and to Quill's broader remarks. Political conditions in T.W.U. (BW—Dec. 18 '48, p106) aren't the whole answer. Best guesses are that Quill was thinking of the effect of an unpopular strike during federal and state hearings on a new labor law. The climb in unemployment (BW—Feb. 19 '49, p19) and the drop in the cost of living (page 113) also were big factors.

Whose U.A.W.?

A.F.L. auto workers threaten C.I.O. stronghold by seeking bargaining rights at new Chevrolet plant.

A.F.L. is challenging C.I.O.'s United Auto Workers—on what C.I.O. had counted as practically home ground. The battle lines are forming at the new Chevrolet parts plant set up by General Motors at Cleveland. C.I.O. had expected no real trouble there.

• **Foot in Door?**—An A.F.L. federal labor union (one not affiliated with any international union) is making a strong bid for Chevrolet-Cleveland bargaining rights. It might even succeed in putting its A.F.L. foot in the General Motors bargaining door. U.A.W. (C.I.O.) already had figured the new contract as a sure thing—banking heavily on its great strength in other G.M. auto plants.

The federal union grew out of a resurgence of A.F.L. strength in Cleveland. A recent surprise victory of the United Automobile Workers (A.F.L.) over U.A.W. (C.I.O.) gave the revival its big start. The A.F.L. union nosed out its C.I.O. counterpart at the Fruehauf Trailer Co. plant at Avon Lake by 614 to 582.

• **Fertile Field**—With the Fruehauf victory under their belt, A.F.L. organizers moved against the new Chevrolet-Cleveland plant. They had good material to

work with there: Many of the new G.M. employees were picked up from A.F.L. plants that had suffered operating cutbacks. They already had A.F.L. cards. All A.F.L. had to do was put them into a federal labor union, without changing their union membership, and set them to work getting new recruits.

The Chevrolet-Cleveland plant now employs about 1,000. It is still expanding, and may have 7,500 employees when full-scale operations get under way.

LABOR BRIEFS

New-car dealers are in interstate commerce and that brings them under the Taft-Hartley law. NLRB so ruled in a California case involving charges of unfair labor practices. Reasoning: Their merchandise is made outside the state.

• **Veterans** held 46% of all government jobs on Jan. 1, 1949, when 865,000 were on the federal payroll. Of these, 113,700 were classed as disabled veterans.

• **Labor law's co-author**, former Rep. Fred A. Hartley, Jr., is the new head of Tool Owners Union, which wants tighter union controls (BW—May '47, p96).

• **Reading list** for industrial and labor relations men can be had from the New York State School of Industrial & Labor Relations, Cornell University. It's free to New Yorkers, costs others 10¢. Write to Ithaca, N. Y.

• **Pay for sleeping** is claimed by Jersey City (N. J.) watchman in a \$3,835.69 court suit. He wants to collect for the six hours nightly he was required to sleep on company premises in the wee hours between split shifts. He complains that he was subject to duty, often awakened.

• **John Hancock** has agreed to talk contract terms with C.I.O. office workers' union, which claims to represent 5,400 of company's insurance agents (BW—Feb. 19 '49, p102).

The Pictures—Acme—25 (1), 101; Esther Bubley, Standard Oil (N. J.)—34; Harold Corsini—Standard Oil (N. J.)—36; Charles Phelps Cushing—19; Harris and Ewing—21, 25 (3), 116 (left); Int. News—25 (2), 116 (rt.), 131; Keystone—125; Wide World—22, 25 (2), 103, 118, 129.



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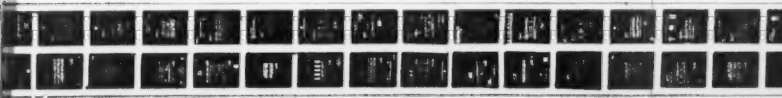
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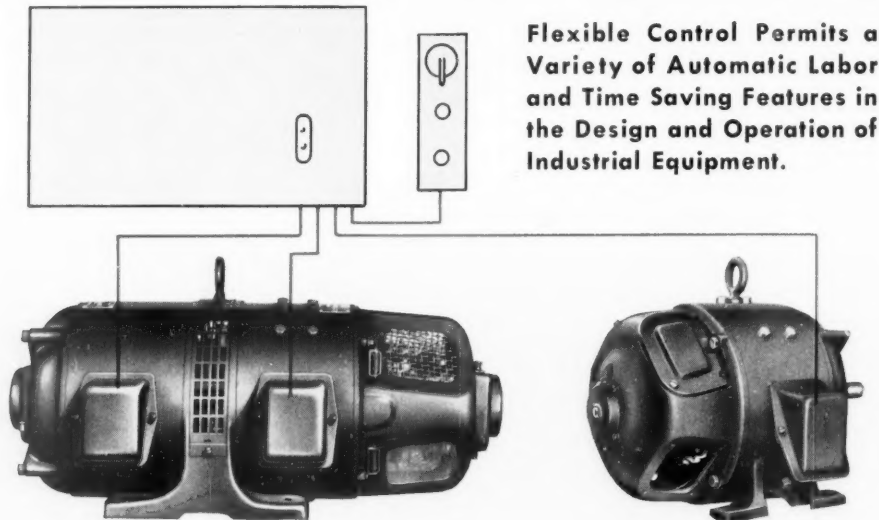
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INTERNATIONAL OUTLOOK

BUSINESS WEEK

FEBRUARY 26, 1949



There's a good chance that Congress will fortify Truman's world development plan with guarantees for U. S. investments abroad.

U. S. foreign traders and investors are working up some ideas now. They would like to see Congress act on them this spring.

Here's their feeling: The interdepartmental committee Truman has set up on world development isn't enough. The committee is thinking only of how U. S. and United Nations technical teams can promote health, agriculture, roads, etc. That's fine. But, say the businessmen, you won't really get backward areas on their feet without private investment.

•
So what these executives want is an "insurance" fund of \$500-million to \$1-billion.

The fund would sell insurance against non-business risks abroad—war; confiscation; inability to get dollars back out.

The investor would pay a fee, of course. It might vary by type of risk. (ECA's exchange guarantee for new investments in Marshall Plan countries costs 1% a year.)

The guarantee would be put on a world-wide basis. It would absorb ECA's insurance system. And it would probably cover old as well as new investments. (You could hardly discriminate against the old ones.)

U. S. direct investments abroad already total \$8-billion to \$9-billion. So Congress would be underwriting a vast sum.

You can be sure, though, that the guarantees would not cover everything. For example, U. S. companies with a stake in Canada (total direct investment is about \$2-billion) aren't much worried about non-business risks.

•
Another kind of guarantee plan may come from the White House.

Officials there are thinking along this line:

The joint Brazil-U. S. technical mission has done a good job (BW-Feb. 19 '49, p115). Use the same kind of mission to blueprint needs elsewhere. Let local capital, plus World Bank and Export-Import Bank funds, build the basic utilities. Then call on private U. S. capital for approved industrial projects.

These companies would be guaranteed against any loss.

•
Secretary of State Acheson seems to have the North Atlantic Alliance back on the track again.

Last week Acheson was up against a Senate demand for something with no more teeth than the old Kellogg Peace Pact.

But Senate leaders have switched a little now. They will take a formula that (1) makes Russia think twice before attacking western Europe; (2) gives western Europe the confidence it needs for economic recovery.

•
Here are the steps that come next in the North Atlantic Alliance:

(1) Approval of the State-Senate formula by Canada, Britain, France, and the three Benelux countries.

(2) Formal ratification of the pact by the U. S. Senate.

(3) Signature of the pact at a special conference in Bermuda.

It's too soon to say what countries, beside the original seven, will sign up at Bermuda. Norway seems certain. Others that the U. S. wants in: Denmark, Iceland, Portugal, Italy.

•
Don't be surprised if there is a general election in Britain this summer

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK
FEBRUARY 26, 1949

or fall. The Labor party has just about decided it can do better this year than next. (An election must be held by July, 1950.)

The party strategists look at it this way: About a third of the middle-class is still behind Labor; this was proved in a recent local election. A lot of middle-class voters might swing, though, when Labor thumps for more nationalization in its election platform. (This has to be made public at the party's annual conference in June.) But as an antidote to this bad medicine, Labor can offer the middle-class in the next few months:

(1) Less austerity. Rationing of clothes is just about ended. All rations on candy end April 24. Industrial controls will be eased.

(2) Economic recovery. The gap between imports and exports is rapidly growing smaller. And there will be a budget surplus big enough to allow the biggest repayment of the national debt in British history.

•
British shipyards are worrying about German and Japanese competition.

A British mission in Tokyo just tried to keep the U. S. from letting the Japanese build ships on foreign order. And now London has its wind up over the potential German threat.

Here's the kind of thing that the British fear from Germany: Kiel shipyards have offered to build seven 3,000-ton motorships for foreign contract. Delivery is promised in 12 months. The price is \$700,000. (By British reckoning, that's only two-thirds of the world price.)

Two of these ships have been offered to Norway. And Norway has been buying most of its ships from Britain since World War II.

•
Washington doesn't think Japan is recovering fast enough.

That's the real meaning of Secretary of the Army Royall's "off the record" remarks in Tokyo.

Here's what Royall probably wanted to impress on Gen. MacArthur:

Economic recovery can't be held up in the name of military necessity. Japan's strategic value to the U. S. has been over-rated in Tokyo, anyhow. It's time to talk about stability. That means independence of U. S. aid.

•
Royall intended to warn Premier Yoshida's right-wing government, too.

Yoshida has been playing Japan's strategic value for all it's worth. He has three objectives:

- (1) To convince MacArthur that the rightists should have a free hand in Japan's internal affairs.
- (2) To get as many dollars out of the U. S. as possible.
- (3) To have U. S. occupation troops to quell any internal resistance.

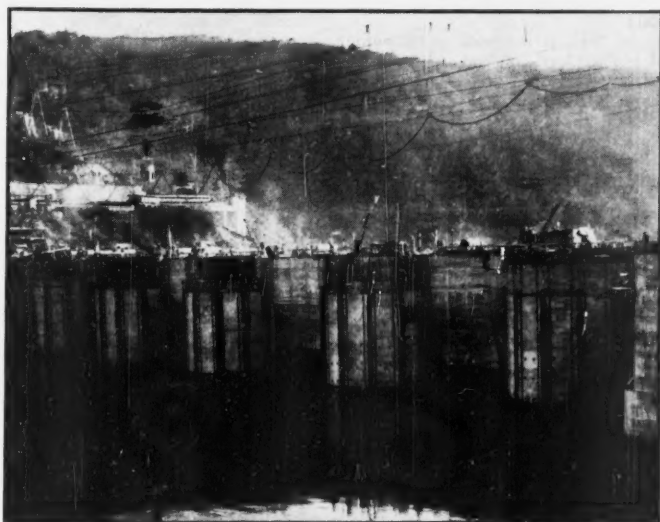
•
The French franc is firming up fast.

Early this week the free market rate for the U. S. dollar was 395 francs. A few weeks ago it was 550. The price of gold (in francs) has dropped 25% from the January high.

Reasons for the improvement are:

- (1) Success of the recent government loan from the French people.
- (2) Collapse of farm prices. Chief food products have dropped 60% at the farm, are still falling. In fact, the National Farm Assn. has threatened a buyers' strike unless the government comes through with support prices or squeezes industrial prices.

BUSINESS ABROAD



NEW POWER PROJECTS, like this one on the Rhone, haven't saved France from . . .

Troubles in State-Owned Power

Under nationalization, the French electric-power industry has boosted its capacity 48%. But that's not enough, and it's in the red. Critics blame overcentralization, politics, inefficiency.

PARIS—In the next month or so embattled French politicians will have to make a crucial decision: Are France's state industries going to be made to pay their own way?

The showdown will come when the Queuille government's state industry reform bill gets a hearing in the Chamber of Deputies (BW—Feb. 19/49, p116). Then the deputies will have to decide if they are willing to slow up subsidies and bar political patronage in the coal, electricity, and aviation industries, and in France's banks.

• **Marginal Operations**—No one thinks all these industries could pay their way today even if they were handed back to private owners.

The coal industry was a marginal operation for a generation before it was nationalized.

The aviation industry was in a steep dive when the state stepped in in 1936; it hasn't pulled out yet.

The banking system, had it not been nationalized, would have had trouble adapting itself to France's postwar semi-socialism.

But the French power industry, Electricite de France, is a different story.

This was a healthy and prosperous industry when the state took over in April, 1946.

• **Increased Capacity**—Electricite de France controls virtually all the electric power generated and distributed in France. It is the pride of French socialists. They claim that only through state ownership can France expand its power capacity fast enough to meet new demand and offset dwindling coal supplies. As proof they point to the fact that since the war Electricite de France has increased the nation's power capacity 48% over 1938.

But what the socialists don't say is that Electricite de France has been operating in the red ever since it was founded.

• **Neglected Maintenance**—Electricite de France claimed that it broke even last year on operating expenses. It did, on paper. But a second look at its books shows that it kept out of the red by neglecting normal equipment replacement and maintenance—to the tune of 5-billion francs (about \$13-million). This can fairly be considered a deficit. When all the chips are counted the real deficit probably will come close to 1947 losses

—5.2-billion francs. Since gross annual income runs about 130-billion francs, the deficit comes out at 4%.

Electricite de France blames the poor record on the fact that a number of obsolete thermal power plants had to be put into operation last year at a time when coal prices were 19 times prewar. It also points to the roughly 30% wage increase won by workers during the year.

• **Inefficiency?**—Of course, Electricite de France has had the benefit of higher prices for its product. The price of power has climbed from 1.5 francs per kwh. before the war to 18 francs per kwh. now. But France's wholesale price index had meanwhile climbed faster: At the year's end it stood at 22 times prewar.

Critics refuse to accept these excuses. They say there is only one explanation for Electricite de France's deficit: inefficiency.

Unquestionably, there are three general weaknesses:

• **Overcentralization.** The company founders under a top-heavy bureaucracy in Paris. Yet one of the major promises was that nationalization would break up the private electrical "monopoly" into more efficient and flexible regional units.

Instead, local technicians and managers were fired wholesale for political reasons, were replaced only after long delays. Meanwhile, regional companies were run from Paris.

The habit stuck. Consequently local companies are now reluctant to assume either authority or responsibility. Decisions which should be made on the spot are habitually referred to Paris.

• **High wages.** Electricite de France workers are overpaid by French standards. Average salary of employees is 400,000 francs (roughly \$1,000) a year—nearly 25% more than the national average. Yet the majority of Electricite de France employees are not highly skilled workmen.

• **Communists.** The Confederation Generale de Travail, powerful Communist-led labor union, seized control of the Electricite de France as soon as it was nationalized. The CGT was able to purge thousands of key non-Communist directors and technicians. It then forced management to give the union a big say in running the industry through its large representation on the Enterprise Committees. These were mixed management-labor committees set up throughout the industry after the war to give labor a voice in management.

Top-level jobs have been purged of Communists by now. But the CGT still has a lot of influence in management. It uses its influence when it can to keep the brakes on the industry. Object: to sap the strength of the Marshall Plan.

• **Expansion**—One of the government's strongest arguments for taking over the



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electrical industry was that the new investment program necessary to French recovery was too big for private capital to handle. Here's what Electricite de France has done to fill this part of the bill:

In 1947, it increased power output 1.5-billion kwh., opened six new power plants.

In 1948, Electricite de France increased its output 2.4-billion kwh. The two new power stations at Genissiat (BW-Jun. 21 '47, p98) on the Rhone River accounted for 1-billion kwh. alone. Five other big plants that began turning last year made up most of the rest of this increase.

• **Not Enough**—Despite these achievements, Electricite de France still isn't keeping pace with demand. To do that, it would have to expand production by nearly 1-billion kwh. a year more than it is now. For France's power consumption is doubling every 10 years in normal times. It now stands at 27.5-billion kwh. per year. And there is the big wartime lag in construction to make up.

Trouble is, Electricite de France hasn't a chance of raising the extra capital needed for such an acceleration of its development program.

• **Own Money**—How much is needed? The prewar private companies were able to reinvest an average of 30% of gross income. They were able to finance a 2-billion franc annual investment program without any state help. Building costs have multiplied roughly 20 times since then, so this investment was equivalent to about 40-billion francs today.

Electricite de France has met the test here: In 1948 it spent 60-billion francs on expansion; in 1947, 40-billion. But all of this had to come out of state coffers—despite two years of feverish effort to get private credit. Now the coffers are practically bare. So Electricite de France will have (1) to bring in enough money to finance its own expansion program; or (2) to attract private capital.

• **Private Capital**—Only increased efficiency can make Electricite de France pay its own way. At the moment, only 10% of gross receipts are set aside for capital investments of all kinds. This includes equipment replacement, servicing of loans and so forth, as well as new investments.

There's more than enough private credit floating around to finance any scale of expansion desired. Private industrialists estimate that the Electricite de France should now be able to raise up to 500-billion francs per year if it had followed sound business policies. Now, of course, private investors won't touch Electricite de France on any terms.

• **Arbitrary Terms**—Furthermore, private investors are still brooding over

what happened when the industry was expropriated by the government. Nationalization was put through just after the war when stock values were way below par because of war damage suffered by the industry. On top of that, the announcement that the electrical industry was to be nationalized halved the value of shares overnight.

When it took over, the government arbitrarily fixed indemnity terms. Stockholders were forced to exchange their shares for long-term obligations bearing 3% interest. These obligations couldn't be marketed at anything near their face value. The net loss to stockholders was estimated to have been at least 60% of the value of their property at war's end.

• **No Confidence**—Rate fixing by Electricite de France since 1946 has added to the distrust of potential investors. For example, the company grimly froze rates throughout the inflationary year of 1947. Then just as the price spiral began to flatten out a little, it doubled its rates.

Unless confidence can be rebuilt by shrewd and prudent management Electricite de France can't expect any solid help from the private businessmen.



Boost for Budapest

A new source of power and a new source of fuel are in store for Budapest industries if Hungary's three-year plan is carried out on schedule. By June a 128,000-kw. steam power plant is to be operating in the Matra district of northwest Hungary. Before the year is out, Budapest will be getting natural gas, piped from nearby Budafok. The power plant is located in the heart of Hungary's brown-coal region. A nearby mine will supply the fuel. The power will be relayed over 100,000-v. transmission lines to the capital.



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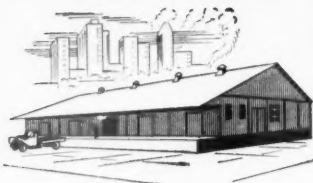
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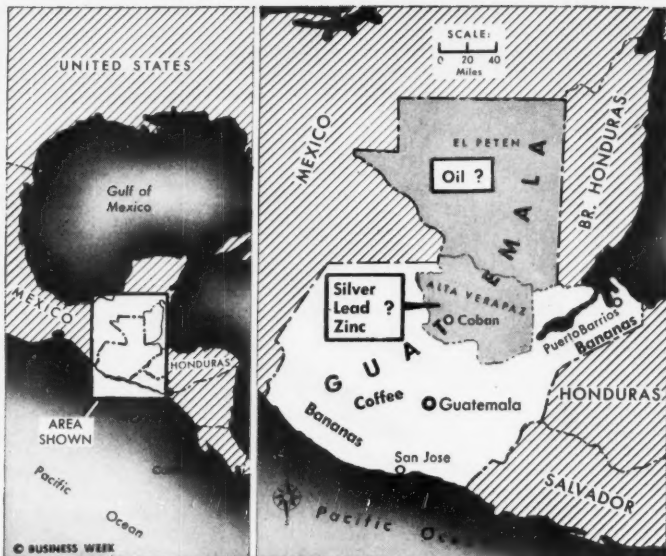
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ON GUATEMALA'S MAP, signs point to new resources. So U. S. business asks...

What Has Guatemala Got?

New company, backed by U. S. and Guatemalan capital, will tap country's untried mineral resources. Other U. S. firms are exploring for oil. But labor policies cramp foreign development.

GUATEMALA CITY—U. S. capital may get a chance to develop new oil and mineral sources in Guatemala. It will face some tough political hurdles in this rich Central American republic. But a few companies are being let in to have a look around, at least.

• **Mining Venture**—The big news concerns silver, lead, and zinc. These reportedly abound in the jungles of the state of Alta Vera Paz. Compania Minera de Guatemala has signed an agreement with the Guatemalan government to open up some mines. The firm's head is Allen Hoover, son of U. S. ex-President Herbert Hoover. This is the country's first big mining venture.

Hoover has been poking around in the area for six years. He was convinced three years ago that he had struck pay dirt. But it took three more years to convince the Guatemalans that they would need his help to get it out.

Now, under the new agreement, Guatemalan and U. S. money is backing a new company, Compania Central Americanas de Minas. It was formed to exploit Hoover's finds. Robert Sayre of Denver, Colo., is reported to be one of the biggest shareholders.

• **Oil**—A search for oil is going on in the state of El Peten, one of the wildest

corners of the earth. Standard Oil Co. (Ohio), Atlantic Refining Co., and Tide Water Associated Oil Co. all have exploration licenses.

These licenses are little more than permits to look around. Guatemala's strong-man president, Juan Jose Arevalo, is jealously guarding his country's right to develop its own oil resources. Arevalo's stubborn stand has already scared off one U. S. firm, Union Oil Co. of California. The others are hanging on in the hope that a break in Central America's ever-changing political scene will make an oil venture possible some day.

Guatemala's oil deposits are only third-rate, by U. S. standards. But U. S. companies figure it's worth taking a flyer on them. Standard of Ohio has been surveying Guatemala for more than a year. It talks optimistically of getting development rights soon. Atlantic Refining and Tide Water Associated are exploring on a joint license granted to the Compania Petrolera de Peten.

• **Labor Tangle**—Meanwhile, established U. S. interests in Guatemala have become enmeshed in President Arevalo's labor laws. Arevalo got his job in the wake of a 1944 revolution by offering

labor almost unlimited powers. As a result, labor disputes today are tying up some of the country's best money makers: coffee, which makes up 70% of the country's export revenue, and the rich banana crop.

• **United Fruit Case**—United Fruit Co., Boston, biggest U. S. operator in Guatemala, knows all about the banana trouble. United claims that slowdown strikes at Puerto Barrios have forced banana ships to lay over 36 to 48 hours—just long enough for the bananas to become overripe.

The tieups have driven United to cancel all its shippings to Guatemala except mail and passenger craft under contract. The issues at stake are typically Latin American: mechanization, high preference to local labor, and wages. But Guatemala's labor laws have a few peculiarly Guatemalan twists. An example: When you go to a Guatemalan court in a labor controversy, the worker's testimony is considered *prima facie* evidence. It is up to you, as plaintiff, to prove he is wrong.

Guatemalan business circles stand solidly behind United Fruit. So do most of the country's newspapers. (Guatemala has a free press.) But President Arvalo shows little concern. Said the Guatemalan state radio last week: "The United Fruit Co. has flatly refused to obey our country's labor laws. . . . [As a result] there are 10,000 workers and their families deprived of the chance to earn their daily bread. . . ."

• **Hopeful Sign**—For United Fruit and other U. S. firms, there is one encouraging sign: Returns from the country's recent congressional elections gave opposition parties at least 11 out of the 61 seats in parliament. During the rule of President Ubico, Arvalo's predecessor, no opposition at all was allowed.



GUATEMALA'S PRESIDENT Arvalo has a chilly welcome for U. S. concerns



The peanut vendor knows his onions!

There's a mighty smart peanut vendor in a large Southern city. His factory isn't a very big one—but it is his only means of livelihood. As long as it stays in full production, he can look forward to his three square meals a day. But if it's destroyed by fire—bing! He's out of business

till he can get a new one. ¶So this farsighted business man took no chances on a stoppage of his income.

He invested in a 5-pound Kidde* carbon dioxide (CO₂) extinguisher that goes everywhere his roaster goes. The extinguisher cost as much as the roaster—but he knows it's money well spent!

¶Perhaps a lot of business men could take a tip from the peanut vendor. Production stoppages caused by fire can be more costly than the fire itself, and most of them can be avoided. ¶Why not talk your

fire-protection problems over with a Kidde representative? He may be able to show you new ways

of smashing the threat of fire damage—of keeping your plant at its job of producing goods and income.

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ECA'S LEDGER

Congressmen from both sides of the Capitol took a few parting shots at ECA last week. Their chance came as the debate on second-year appropriations wound up.

Some of the shots hit home; but most were fired just for the noise. While they won't do much to alter ECA's course, they are a good measure of the questions and resentments that have built up.

In the Senate

The ECA "watchdog" committee (BW-Jul.17'48,p16) had suggestions on the German reparations dispute and the purchase of strategic materials.

(1) Said Nevada's Pat McCarran, committee chairman: "The U.S. does not owe (western Europe) both reparations and Marshall aid." The committee's suggestion: A portion of ECA dollars could be set aside to "buy" the claims of ECA nations to German reparations. That would leave the U.S. with a free hand in the final disposition of reparations plants.

(2) The watchdog committee also thought that ECA's purchases of strategic materials ought to be stepped up. ECA nations are required to set aside 5% of their counterpart funds to buy strategic materials for U.S. stockpiles. So far, less than \$32-million worth of orders have been placed—only \$7.7-million actually shipped by the end of 1948.

The committee couldn't find any lack of money. There is some \$83-million in local currencies now available to buy strategic materials. By the time all of ECA's first year orders have been delivered and paid for, western Europe's counterpart funds will have some \$200-million for this purpose.

The slowdown is due to other reasons. Strategic materials are short the world over; it will take long-term development programs really to get them moving. And some Marshall Plan nations don't like to give the materials to the U.S. when there is a chance to sell them for dollars.

(3) Sen. Owen Brewster (R., Me.) produced an amendment aimed at using ECA to settle the Indonesia dispute. Brewster proposed that ECA aid should be cut off to those nations refusing to obey the orders of the U. N. Security Council.

(4) Sen. Homer Capehart said he was going to ask Congress to cut ECA's second-year appropriation of \$5.8-billion in half. The Indiana Republican reasoned this way: ECA says that western Europe's production is approaching pre-war levels. So: "Why are American

taxpayers under any obligation to place any nation in better shape than it was before the war?"

In the House

(1) House discussion ranged from foreign oil to Greece. Rep. John Davis Lodge was reading an amendment aimed at ECA's oil-buying policy. The Connecticut Republican was impressed by the testimony of L. Dan Jones, attorney for the Independent Petroleum Assn. of America.

Here is Jones' argument: ECA is paying U. S. market prices for offshore purchases of oil. This materially benefits the competitive position of the world's "big seven" oil companies at the expense of the small producers. Standard of New Jersey and of California, Texas Co., Gulf, Shell, and Anglo-Iranian are expanding operations with the prospect of more ECA business. So they had created a world surplus of oil which is being dumped on the U. S. market, to the detriment of the small producers at home.

(2) Rep. Charles Eaton thought the net result of ECA's aid to Greece was "nothing." The New Jersey Republican said: "Why don't we send our soldiers to Greece and clean up the guerrillas?"



Wants Watch Help

The nation's 8,500 precision watchmakers are in dire need of strong-armed protection. That's what Daniel J. Pyne told the Senate Finance Committee last week. Pyne is trustee of Waltham Watch Co., now in reorganization (BW—Jan. 8 '49, p. 26). Swiss competition, according to Pyne, has rocked the U. S. watch industry on its jeweled bearings.

Pyne said that because of low tariff rates under the Reciprocal Trade Agreements Act, 80% of all watches sold in the U. S. today have Swiss parts. The flood of imports, Pyne thinks, is rapidly driving U. S. manufacturers out of a business that is too vital to national defense to be written off.

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THE TREND

Rediscover the G.A.O.

Shortly after World War I, the public called for a more businesslike government in Washington. Taxpayers said they wanted some auditing and budgeting of what was spent. They naturally hoped this would bring economies.

Congressmen listened, then acted. A law was passed in 1921 to do the job—the Budget & Accounting Act. It set up two new agencies—the Budget Bureau and the General Accounting Office.

Gen. Dawes soon strode on the scene. He became budget boss. He was a colorful figure; his upside-down pipe caught the public's fancy. All of a sudden as dreary a thing as a budget was glamorized. Through the years, the Budget Bureau has made headlines and history.

The other half of what the 1921 act created never got equal billing. An appealing phrase, "watchdog of the Treasury," was coined for the Comptroller General, head of the G.A.O. But no Gen. Dawes came along to whet the public's interest or curiosity.

The "watchdog" agency didn't take on—or receive—new assignments of any consequence. Rather, it performed in a narrower sphere than the law specified. It was supposed to do two main things: (1) review what had been spent, uncover mistakes, and see that the expense vouchers were straight; (2) tell Congress what ought to be done to check and eliminate overspending. The first job has been done to a fare-thee-well. But the second has never got the attention it deserves.

Interest in governmental expenditures and economy hasn't slacked off. If anything, it has mounted. That's why the Hoover commission was created. After more than a year of study, the commission is beginning to make its reports. It calls for the elimination of overlapping bureaus and divisions and departments; it suggests how to cut down government expenses in many ways.

President Truman meanwhile is coaxing Congress to give him more authority to reorganize the executive departments. It looks as if his request will be granted. That will make it possible for him to put into operation many of the Hoover commission proposals.

That is good as far as it goes. An intelligent reshuffle of the government bureaus should save time and money. A real improvement should result. But there is need to keep a continuous check on the operations of the government departments, to see that they are run on a businesslike basis as possible. A constant watch must be maintained, or the need for further changes will not become apparent until things have got so far out of hand that millions of dollars are uselessly spent.

Who should do this? Should a new office be created? We don't think that is necessary. There really is a simple answer: Rediscover the G.A.O.

Now is the time for the head of that office to act.

All the Comptroller General has to do is assert his present authority. He is required by law to make an expenditure analysis of each agency of the executive branch of the government. Those analyses are supposed to help Congress determine whether public funds have been economically and efficiently administered and spent.

His office is so set up that he can do a real auditing job: He has a 15-year term; he is absolutely independent, in his operations, of the executive branch.

In that area of independent action, he can evaluate the changes recommended by the Hoover group after they are adopted. He can measure the value of the bureau shifts President Truman makes. He can tell Congress the truth about government spending.

A strong administration and a strong voice to express his views can make the Comptroller General a giant in government. His agency—the G.A.O.—can show the way to real economy. The G.A.O. should be rediscovered now.

Industry Partners?

Where do we stand today on management-labor relations? Are employer and employee poles apart?

You will find a rather surprising set of answers to questions such as these in a new study—"Partners in Production," issued by the Twentieth Century Fund.

The Fund's tripartite labor committee says there is a heartening amount of agreement between management and labor. And it sees a significant shift in the attitudes of both sides.

The evidence points to a growing sense of responsibility toward their mutual problems: "Collaboration is going on at the shop level. Up above that, where policies are made, thoughtful men on both sides have accepted the need for a positive philosophy, and are groping their way toward mutual understanding. A will to learn how to work together is building up. It may not be long before it breaks through into solid achievement."

The committee report focuses its attention on the four fundamental goals of management and the four major goals of labor. Management's goals are listed as: (1) the economic welfare of the company; (2) good relations with its own employees; (3) freedom to manage; and (4) businesslike, responsible relations. Labor's goals are: (1) security; (2) a chance to advance; (3) more human treatment; and (4) more dignity on the job.

The committee goes on to analyze these goals to see what can be done to bring about mutual understanding on each of them. The goals of worker security and the economic welfare of the company are called the goals of real conflicts. But even those objectives, according to the report, contain the potential of compromise.

The Twentieth Century Fund's labor committee presents the report as a basis for labor-management understanding. Its value can be high, even if it gets us only a little closer to employer-employee harmony.



Car shown—COMMANDER STARLIGHT COUPE

Announcing the new 1949 Studebakers

A new vogue in interiors by Studebaker stylists!



A VIEW INSIDE THE LUXURIOUS NEW 1949 STUDEBAKER LAND CRUISER

A NEW STUDEBAKER style leader now swings on the scene! A dramatic new version of the new vision, the new ride, the flight-streamed new look that Studebaker originated is now ready!

A new Commander with new power! A new Champion with new glamor! A special extra-long-wheelbase new Land Cruiser that's style-marked with a new distinction!

You open the doors on new beauty that makes you gasp—refreshingly different new decorator-fabric upholsterys of capti-

vating tones and richness—superbly designed new instrument panels and appointments.

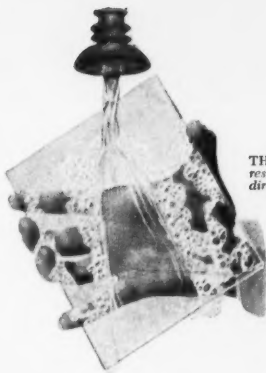
Body finishes in new colors that raid the spectrum! Dream-lined sedans, coupes and convertibles with smartly styled new grilles, massive new wrap-around bumpers—and the most attractive contours that ever graced a car!

Take a moment to take a look—you'll find you want to take an hour to admire all the new luxuries and advancements in these 1949 Studebakers.

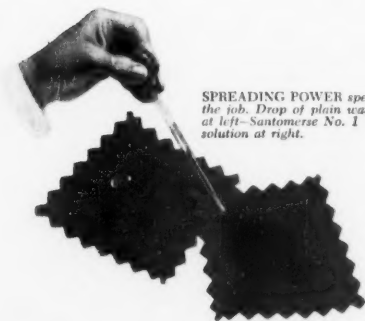
It's a Studebaker year again all over America!



CLEANING. SUDSING action carries loosened dirt in suspension—this prevents re-depositing and re-soiling.

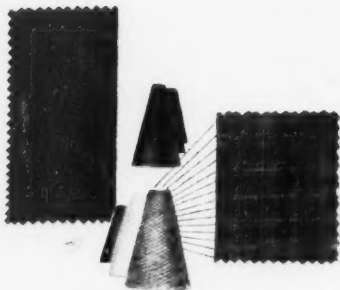


THOROUGH RINSING results because suspended dirt is completely washed away.



SPREADING POWER speeds the job. Drop of plain water at left—Santomerse No. 1 solution at right.

WETTER WATER penetrates faster. Wool yarn floats on plain water—sinks rapidly when a little Santomerse No. 1 has been added.



TEXTILE MILLS use Santomerse No. 1 for many operations—cleaning, scouring, washing, bleaching, dyeing.

Clean cleaner...with wetter water

Water becomes a far better cleaner when it contains a little Santomerse No. 1—Monsanto's *all-purpose* wetting agent and detergent. It saves industry many an hour and many a dollar by doing a faster, more thorough cleaning job.

Santomerse No. 1 makes water wetter. This makes it penetrate faster, dig in deeper, loosen dirt quicker. Santomerse No. 1 adds spreading power. This makes water "cover more ground"—spreads penetrating power over larger areas.

Santomerse No. 1 adds detergency. This means thorough cleaning.

Loosened dirt is held in suspension, so it cannot be re-deposited.

Santomerse No. 1 assures fast, thorough rinsing. Because dirt is suspended, it washes away completely. Santomerse No. 1 has the extra advantage of working equally well in extremely hard water, in acid or alkaline, hot or cold solutions.

Note to Business . . . You can get this all-purpose cleaning help in two ways. Some industries, like textiles, use Santomerse No. 1 as it comes from the drum. Or, you can buy commercial cleaning compounds formulated with Santomerse No. 1 . . . For further information, write Monsanto Chemical Company, 1724 South Second Street, St. Louis 4, Missouri. Use the coupon if you prefer.

Santomerse: Reg. U. S. Pat. Off.

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MONSANTO CHEMICAL COMPANY

1724 South Second Street, St. Louis 4, Missouri

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